CONTRACT PLANS
SIGN - TOLL STRUCTURES
SEGMENT 1B

I-405 MP 6.06 TO MP 8.34

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

VOLUME 13,14
FINAL

KING COUNTY

FINAL DESIGN
NOT FOR CONSTRUCTION

12/17/2021

Washington State Department of Transportation

VOLUME 13

REV NO.	INCLUDED	REV. DATE	SUB. NO.	PLAN REF NO.	SHEET TITLE	SHEET DESCRIPTION
0	X	12/13/2021		ST 1	SIGN CANTILEVER	NB I405 STA 7634+43.00
0		7/29/2021	1165	ST 2	SIGN BRIDGE	NB I405 STA 7666+68.00
0		7/29/2021	1165	ST 3	SIGN BRIDGE	NB I405 STA 7674+58.00
0		7/29/2021	1165	ST 4	SIGN BRIDGE	NB I405 STA 7683+99.00
0	X	12/13/2021		ST 5	SIGN CANTILEVER	NB I405 STA 7694+00.00
0	X	12/13/2021		ST 6	SIGN BRIDGE	NB I405 STA 7726+51.00 LT NB I405 STA 7726+56.00 RT
0	X	12/13/2021		ST 7	SIGN BRIDGE	NB I405 STA 7734+86.00 LT NB I405 STA 7734+84.00 RT
0	X	12/13/2021		ST 8	SIGN BRIDGE	SB I405 STA 5629+58.00
0	X	12/13/2021		ST 9	SIGN CANTILEVER	SB I405 STA 5639+20.00
0	X	12/13/2021		ST 10	SIGN BRIDGE	SB I405 STA 5656+89.00
0	X	12/13/2021		ST 11	SIGN CANTILEVER	SB I405 STA 5674+04.00
0	X	12/13/2021		ST 12	SIGN BRIDGE	SB I405 STA 5689+48.00
0	X	12/13/2021		ST 13	SIGN BRIDGE	SB I405 STA 5705+03.00 RT SB I405 STA 5705+07.00 LT
0	X	12/13/2021		ST 14	SIGN BRIDGE	SB I405 STA 5714+67.00 RT SB I405 STA 5714+72.00 LT
0	X	12/13/2021		ST 15	SIGN BRIDGE	SB I405 STA 5731+02.00 LT SB I405 STA 5731+07.00 RT
0	X	12/13/2021		ST 16	BRIDGE MOUNTED SIGN BRACKET	NE44TH BRIDGE MOUNTED SIGN LAYOUT
0	X	12/13/2021		ST 16A	BRIDGE MOUNTED SIGN BRACKET	NE44 STA 17+20.57
0	X	12/13/2021		ST 16B	BRIDGE MOUNTED SIGN BRACKET	NE44 STA 17+17.16
0	X	12/13/2021		ST 16C	BRIDGE MOUNTED SIGN BRACKET	NE44 STA 17+24.34
0	X	12/13/2021		ST 17	SIGN BRIDGE	NE44 STA 21+00.00 RT NE44 STA 21+18.00 LT
0	X	12/13/2021		ST 18	TOLL GANTRY DBL. CANTILEVER	D_NB405-NE44 STA 686+05.00
0	X	12/13/2021		ST 19	TOLL GANTRY DBL. CANTILEVER	D_NE44-NB405 STA 701+19.00
0	X	12/13/2021		ST 20	TOLL GANTRY CANTILEVER	SB I405 STA 5670+85.00
0	X	12/13/2021		ST 21	TOLL GANTRY CANTILEVER	NB I405 STA 7720+92.00
				ST 22	SIGN BRIDGE	NB I405 STA 7743+65.00
				ST 23	SIGN BRIDGE	NB I405 STA 7753+14.00
				ST 24	SIGN BRIDGE	NB I405 STA 7773+78.00
				ST 25	TOLL GANTRY DBL. CANTILEVER	D_NB405-112SE STA 782+78.00
				ST 26	SIGN BRIDGE	NB I405 STA 7783+41.00
				ST 27	SIGN BRIDGE	NB I405 STA 7792+47.00
				ST 28	TOLL GANTRY DBL. CANTILEVER	D-112SE-NB405 STA 793+44.00
				ST 29	SIGN BRIDGE	NB I405 STA 7806+94.00
				ST 30	SIGN BRIDGE	SB I405 STA 5740+40.00
				ST 31	SIGN BRIDGE	SB I405 STA 5759+93.00
				ST 32	TOLL GANTRY CANTILEVER	SB I405 STA 5769+75.00
				ST 32A	SIGN CANTILEVER	SB I405 STA 5795+00.00
				ST 33	SIGN BRIDGE	SB I405 STA 5806+78.00
				ST 34	SIGN BRIDGE	112SE STA 22+75.00
				ST 35	SIGN BRIDGE	112SE STA 24+46.00
				ST 36	SIGN BRIDGE	NB I405 STA 7827+50.00 RT M-NB405 CC STA 6825+79.38 LT
				ST 37	SIGN BRIDGE	NB I405 STA 7849+24.00
				ST 38	SIGN BRIDGE	NB I405 STA 7865+56.00
				ST 39	SIGN BRIDGE	NB I405 STA 7891+49.00 RT NB I405 STA 7891+54.00 LT
				ST 40	SIGN BRIDGE	NB I405 STA 7907+87.00
				ST 41	SIGN BRIDGE	SB I405 STA 5820+73.00
				ST 42	SIGN BRIDGE	SB I405 STA 5829+97.00
				ST 43	TOLL GANTRY CANTILEVER	M-NB405_CC STA 6830+21.00
				ST 44	SIGN BRIDGE	SB I405 STA 5856+94.00
				ST 45	SIGN BRIDGE	SB I405 STA 5864+94.00
				ST 46	SIGN BRIDGE	SB I405 STA 5879+05.00
				ST 47	TOLL GANTRY CANTILEVER	SB I405 STA 5899+15.00
				ST 48	SIGN CANTILEVER	SB I405 STA 5900+00.00
				ST 49	SIGN BRIDGE	SB I405 STA 5907+25.00
				ST 50	SIGN BRIDGE	NB I405 STA 7922+33.00
				ST 51	SIGN CANTILEVER	NB I405 STA 7941+96.00
				ST 52	TOLL GANTRY BRIDGE	M-NB405_RR STA 6950+42.00
				ST 53	SIGN BRIDGE	NB I405 STA 7958+34.00

REV NO.	INCLUDED	REV. DATE	SUB. NO.	PLAN REF NO.	SHEET TITLE	SHEET DESCRIPTION
				ST 54	SIGN BRIDGE	NB I405 STA 7978+09.00
				ST 55	SIGN BRIDGE	NB I405 STA 7987+86.00
				ST 56	SIGN BRIDGE	NB I405 STA 7997+91.00
				ST 57	TOLL GANTRY DBL. CANTILEVER	NB I405 STA 8001+20.00
				ST 57A	BRIDGE MOUNTED SIGN BRACKET	MAIN ST BRIDGE MOUNTED SIGN LAYOUT
				ST 57B	BRIDGE MOUNTED SIGN BRACKET	C_NB405-NE4 STA 1002+50.37
				ST 57C	BRIDGE MOUNTED SIGN BRACKET	C_NB405-NE4 STA 1002+52.31
				ST 58	TOLL GANTRY DBL. CANTILEVER	NB I405 STA 8017+21.00
				ST 59	SIGN BRIDGE	NB405-520 STA 1065+00.00
				ST 60	SIGN CANTILEVER	SB I405 STA 5928+81.00
				ST 61	SIGN BRIDGE	SB I405 STA 5946+96.00
				ST 62	SIGN BRIDGE	SB I405 STA 5957+45.00
				ST 63	SIGN BRIDGE	SB I405 STA 5970+69.00
				ST 64	SIGN BRIDGE	SB I405 STA 5979+91.00
				ST 65	SIGN BRIDGE	SB I405 STA 5988+35.00
				ST 66	BRIDGE MOUNTED SIGN BRACKET	NE 4TH ST BRIDGE MOUNTED SIGN LAYOUT
				ST 66A	BRIDGE MOUNTED SIGN BRACKET	SB I405 STA 6018+25.36
				ST 66B	BRIDGE MOUNTED SIGN BRACKET	SB I405 STA 6018+37.79
				ST 67	BRIDGE MOUNTED SIGN BRACKET	NE 6TH ST BRIDGE MOUNTED SIGN LAYOUT
				ST 67A	BRIDGE MOUNTED SIGN BRACKET	SB I405 STA 6025+36.55
				ST 67B	BRIDGE MOUNTED SIGN BRACKET 1 OF 2	SB I405 STA 6025+10.58
				ST 67C	BRIDGE MOUNTED SIGN BRACKET 2 OF 2	SB I405 STA 6025+10.58
				ST 68	SIGN CANTILEVER	SE CORNER OF 112TH AVE NE AND NE 6TH ST
				ST 69	SIGN CANTILEVER	NW CORNER OF 112TH AVE NE AND NE 6TH ST
				ST 70	SIGN BRIDGE	NB SR167 MP 25.621402
				ST 71	TOLL GANTRY DBL. CANTILEVER	NB SR167 MP 25.964454
				ST 72	BRIDGE MOUNTED SIGN BRACKET	66TH AVE S ST BRIDGE MOUNTED SIGN LAYOUT
				ST 72A	BRIDGE MOUNTED SIGN BRACKET 1 OF 2	NB I405 STA 7340+31.88
				ST 72B	BRIDGE MOUNTED SIGN BRACKET 2 OF 2	NB I405 STA 7340+31.88
				ST 73	BRIDGE MOUNTED SIGN BRACKET	LIND AVE SW BRIDGE MOUNTED SIGN LAYOUT
				ST 73A	BRIDGE MOUNTED SIGN BRACKET 1 OF 2	NB I405 STA 7408+35.87
				ST 73B	BRIDGE MOUNTED SIGN BRACKET 2 OF 2	NB I405 STA 7408+35.87
				ST 74	SIGN CANTILEVER	NB I405 STA 7416+13.00
				ST 75	TOLL GANTRY CANTILEVER	NB I405 STA 7427+82.00
				ST 76	SIGN BRIDGE	NB I405 STA 7466+78.00 LT NB I405 STA 7466+81.00 RT
				ST 77	SIGN BRIDGE	NB I405 STA 7476+49.00
				ST 78	BRIDGE MOUNTED SIGN BRACKET	RENTON AVE OVER I-405 BRIDGE MOUNTED SIGN LAYOUT
				ST 78A	BRIDGE MOUNTED SIGN BRACKET 1 OF 2	NB405-169 STA 493+35.49
				ST 78B	BRIDGE MOUNTED SIGN BRACKET 2 OF 2	NB405-169 STA 493+35.49
				ST 79	SIGN BRIDGE	NB I405 STA 7501+20.00 RT NB I405 STA 7501+25.00 LT
				ST 80	SIGN CANTILEVER	NB I405 STA 7510+36.00
				ST 81	BRIDGE MOUNTED SIGN BRACKET	405/20 BRIDGE OVER SR169 BRIDGE MOUNTED SIGN LAYOUT
				ST 81A	BRIDGE MOUNTED SIGN BRACKET	NB405-169 STA 512+01.44
				ST 81B	BRIDGE MOUNTED SIGN BRACKET	NB405-169 STA 512+13.61
				ST 81C	BRIDGE MOUNTED SIGN BRACKET	NB405-169 STA 512+37.83
				ST 82	TOLL GANTRY CANTILEVER	NB I405 STA 7545+50.00
				ST 83	SIGN CANTILEVER	NB I405 STA 7545+93.00
				ST 84	SIGN BRIDGE	NB I405 STA 7556+16.00 RT NB I405 STA 7556+17.00 LT
				ST 85	SIGN BRIDGE	NB I405 STA 7572+12.00
				ST 86	SIGN BRIDGE	NB I405 STA 7580+26.00 LT NB I405 STA 7580+27.00 RT
				ST 87	SIGN CANTILEVER	NB I405 STA 7589+41.00
				ST 88	TOLL GANTRY CANTILEVER	NB I405 STA 7606+97.00
				ST 89	SIGN BRIDGE	NB I405 STA 7612+11.00 RT NB I405 STA 7612+12.00 LT
				ST 90	TOLL GANTRY CANTILEVER	SB I405 STA 5400+28.00
				ST 91	BRIDGE MOUNTED SIGN BRACKET	SB I405 STA 5414+08.51
				ST 92	TOLL GANTRY CANTILEVER	SB I405 STA 5487+71.00
				ST 93	BRIDGE MOUNTED SIGN BRACKET	CEDAR AVE. U-XING BRIDGE MOUNTED SIGN LAYOUT

NO.	ISSUE DATE	ISSUE RECORD - DESCRIPTION	DESIGNED BY	ENTERED BY	CHECKED BY	DESIGN MANAGER:

REGION NO. 10 | STATE WASH

XL5467

CONTRACT NO. C9242

SAMUEL J. KURVILLA — STATE OF WASHINGTON — 17438 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

P.E. STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE

P.E. STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405
RENTON TO BELLEVUE
EXPRESS TOLL LANES

INDEX OF SHEETS - VOL 13

PLAN REF NO
IN13-1

VOLUME 14

REV NO.	INCLUDED	REV. DATE	SUB. NO.	PLAN REF NO.		SHEET TITLE	SHEET DESCRIPTION
0		7/29/2021	1165	SSD	0A	SIGN STRUCTURE DETAILS	GENERAL NOTES
0		7/29/2021	1165	SSD	1A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 1
0		7/29/2021	1165	SSD	2A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 2
0		7/29/2021	1165	SSD	6A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES FOUNDATION TYPE 1 - SHAFT DETAILS
0		7/29/2021	1165	SSD	7A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES FOUNDATION TYPE 1 - CAP DETAILS
0		7/29/2021	1165	SSD	8A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES SINGLE SLOPE TRAFFIC BARRIER SHAPE CAP
0		7/29/2021	1165	SSD	11A	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES COMMON DETAILS
0	X	12/13/2021		SSD	A01	SIGN STRUCTURE DETAILS	GENERAL NOTES
0	X	12/13/2021		SSD	A02	SIGN STRUCTURE DETAILS	GENERAL NOTES
0	X	12/13/2021		SSD	A03	SIGN STRUCTURE DETAILS	MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 1
0	X	12/13/2021		SSD	A04	SIGN STRUCTURE DETAILS	MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 2
0				SSD	A05	SIGN STRUCTURE DETAILS	MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 3
0	X	12/13/2021		SSD	A06	SIGN STRUCTURE DETAILS	MONOTUBE CANTILEVER STRUCTURAL DETAILS 1
0	X	12/13/2021		SSD	A07	SIGN STRUCTURE DETAILS	MONOTUBE CANTILEVER STRUCTURAL DETAILS 2
0	X	12/13/2021		SSD	A08	SIGN STRUCTURE DETAILS	MONOTUBE BALANCED CANTILEVER STRUCTURAL DETAILS 1
0	X	12/13/2021		SSD	A09	SIGN STRUCTURE DETAILS	MONOTUBE BALANCED CANTILEVER STRUCTURAL DETAILS 2
0	X	12/13/2021		SSD	A10	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES FOUNDATION TYPE 1 - SHAFT DETAILS
0	X	12/13/2021		SSD	A11	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES FOUNDATION TYPE 1 - CAP DETAILS
0				SSD	A12	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES FOUNDATION TYPE 2 AND 3
0	X	12/13/2021		SSD	A13	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES TRAFFIC BARRIER SHAPE CAP TYPE A
0	X	12/13/2021		SSD	A14	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES TRAFFIC BARRIER SHAPE CAP TYPE B
0	X	12/13/2021		SSD	A15	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES TRAFFIC BARRIER SHAPE CAP TYPE C
0	X	12/13/2021		SSD	A16	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES TRAFFIC BARRIER SHAPE CAP TYPE D
0	X	12/13/2021		SSD	A17	SIGN STRUCTURE DETAILS	MONOTUBE SIGN STRUCTURES COMMON DETAILS
0	X	12/13/2021		SSD	A18	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 1 OF 6
0	X	12/13/2021		SSD	A19	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 2 OF 6
0	X	12/13/2021		SSD	A20	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 3 OF 6
0				SSD	A21	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 4 OF 6
0				SSD	A22	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 5 OF 6
0	X	12/13/2021		SSD	A23	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET DETAILS 6 OF 6
0	X	12/13/2021		SSD	A24	SIGN STRUCTURE DETAILS	BRIDGE MOUNTED SIGN BRACKET ANGLE SCHEDULE
0	X	12/13/2021		SSD	A25	SIGN STRUCTURE DETAILS	TOLL READER CABINET MOUNTING DETAIL
0				SSD	A26	SIGN STRUCTURE DETAILS	NOT USED
0				SSD	A27	SIGN STRUCTURE DETAILS	SIGN FOUNDATION AT ST-057
0				SSD	A28	SIGN STRUCTURE DETAILS	SIGN FOUNDATION AT ST-063
0				SSD	A29	SIGN STRUCTURE DETAILS	SIGN FOUNDATION AT ST-059
0				STT	1	DATA TABLE	LOAD REACTION SCHEDULE
0				STT	2	DATA TABLE	LOAD REACTION SCHEDULE
0				STT	3	DATA TABLE	LOAD REACTION SCHEDULE
0				STT	4	DATA TABLE	LOAD REACTION SCHEDULE
0	X	12/13/2021		STT	5	DATA TABLE	LOAD REACTION SCHEDULE
0	X	12/13/2021		STT	6	DATA TABLE	LOAD REACTION SCHEDULE
0				STT	7	DATA TABLE	LOAD REACTION SCHEDULE

REV NO.	INCLUDED	REV. DATE	SUB. NO.	PLAN REF NO.		SHEET TITLE	SHEET DESCRIPTION

NO.	ISSUE DATE	ISSUE RECORD - DESCRIPTION	DESIGNED BY	ENTERED BY	CHECKED BY	DESIGN MANAGER:

REGION NO. 10 | STATE WASH

XL5467

CONTRACT NO. C9242

SAMUEL J. KURIYATA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

P.E. STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE

P.E. STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

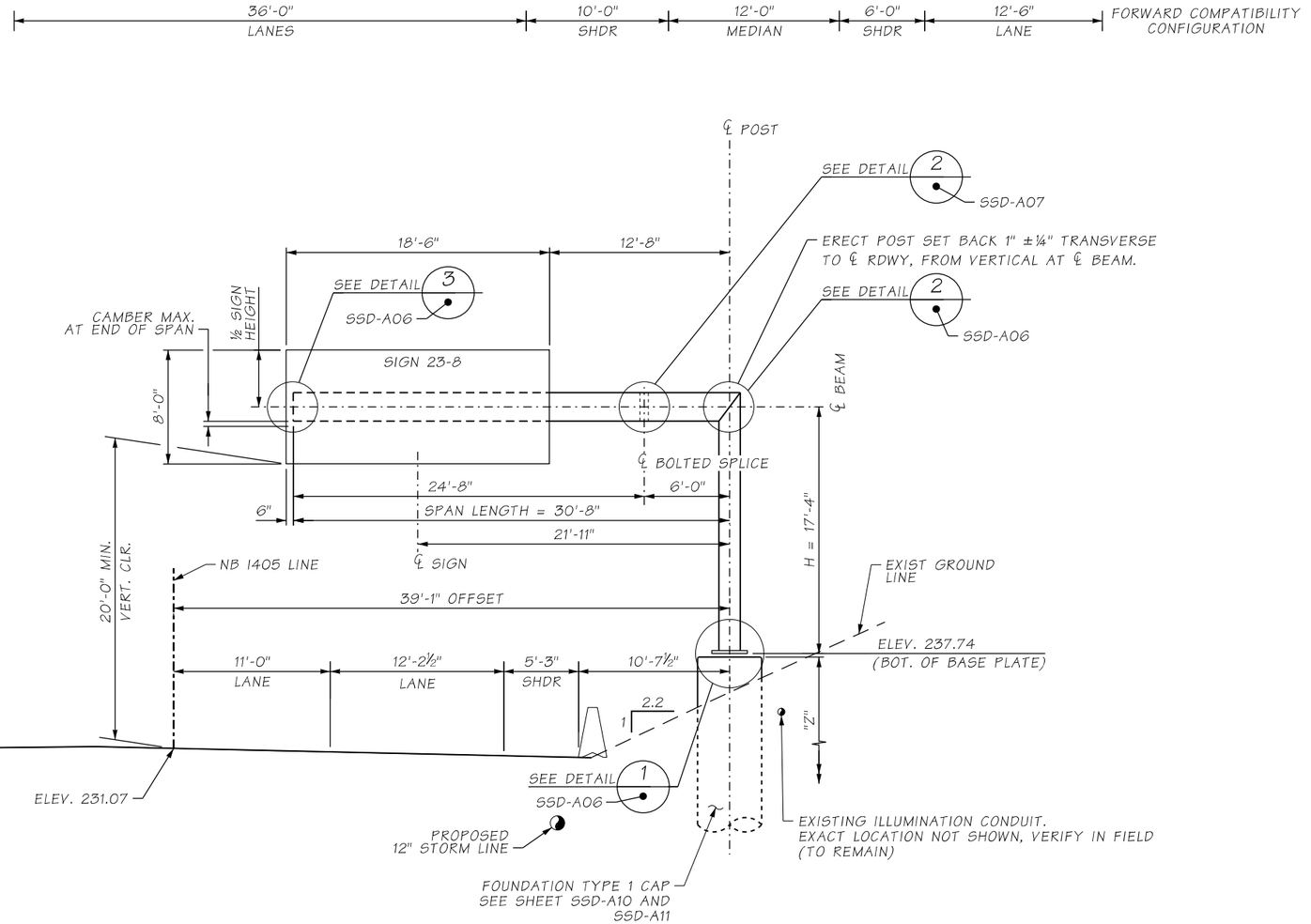
I-405
RENTON TO BELLEVUE
EXPRESS TOLL LANES

INDEX OF SHEETS - VOL 14

PLAN REF NO
IN14-1

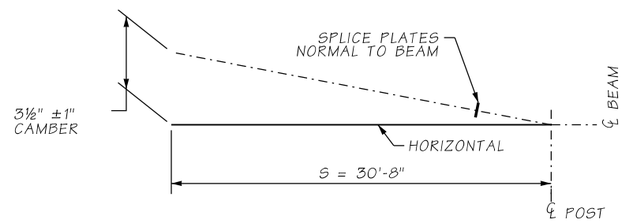
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-23.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 235 SQ. FT. AND Σ(XYZ) SHALL BE LESS THAN OR EQUAL TO 5924 CU. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
RIGHT	4'-6"	12'-0"	CASE 5	#9	20

CANTILEVER SIGN STRUCTURE TABLE																	
POSTS (V)			BEAM A (V)			BEAM B (V)			POST BASE (V)					BOLTED SPLICE #1			
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2"	4.00	4.00	3"	3/4"	5.00	3.00	5.00	3.00	2-1/2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_001.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/10/2021				CONTRACT NO. C9242				
Time:	3:14:35 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN CANTILEVER

NB I405 STA 7634+43.00

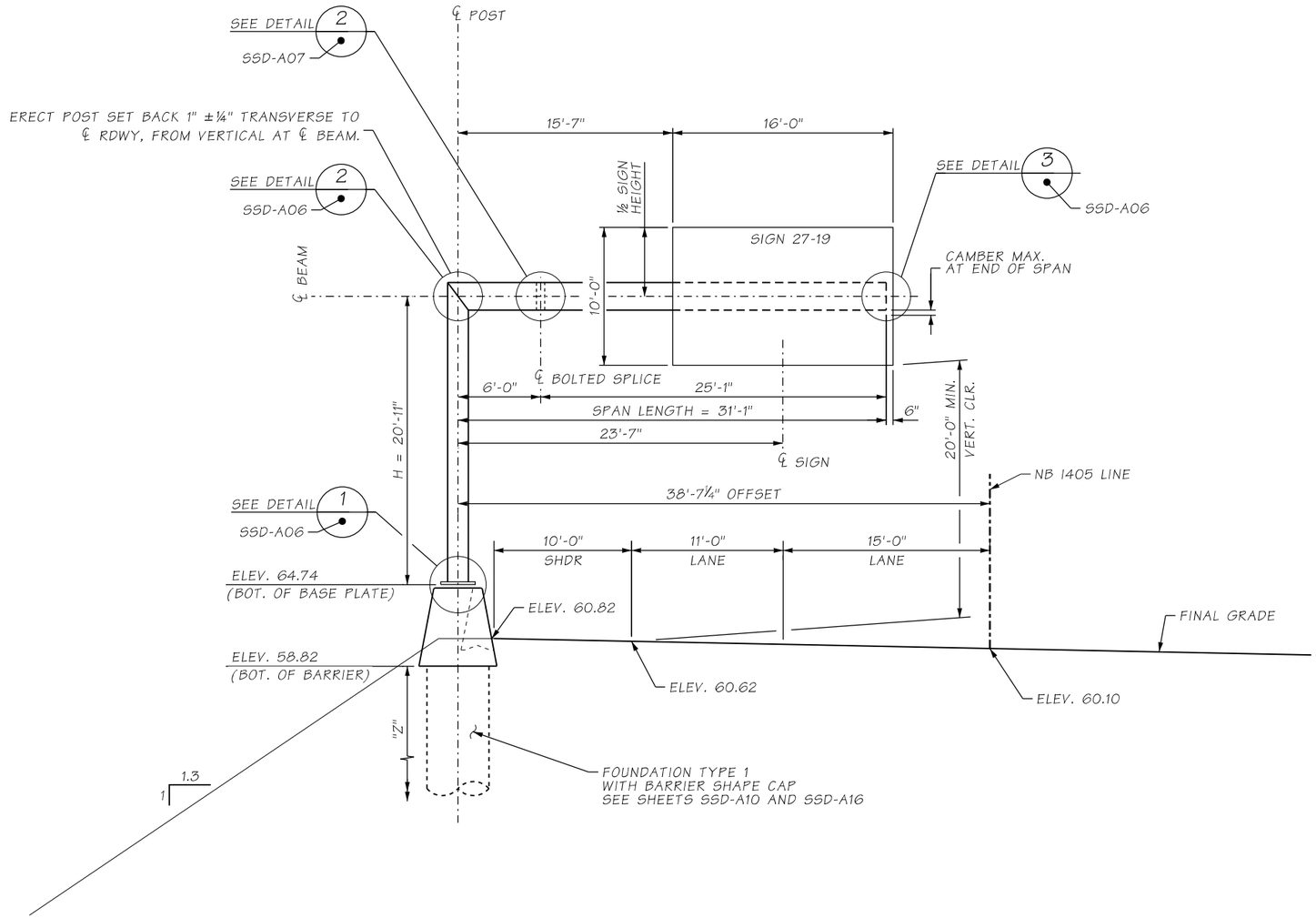
PLAN REF. NO. ST-001

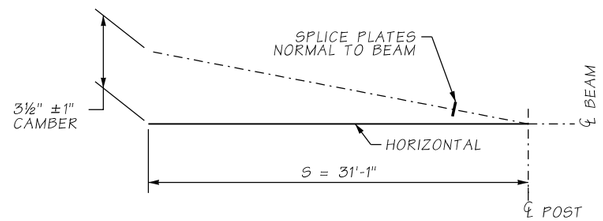
SHEET OF SHEETS

SR FILE NO. SHEET

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-27.
5. SEE PAVING PLAN SHEET PV-27A FOR BARRIER TRANSITION.





BEAM CAMBER DIAGRAM

ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 235 SQ. FT. AND Σ(XYZ) SHALL BE LESS THAN OR EQUAL TO 5924 CU. FT.

FOUNDATION (TYPE 1)					
OFFSET	SHAFT Ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	15'-0"	CASE 5	#9	20

CANTILEVER SIGN STRUCTURE TABLE																	
POSTS (V)			BEAM A (V)			BEAM B (V)			POST BASE (V)					BOLTED SPLICE #1			
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2"	4.00	4.00	3"	3/4"	5.00	3.00	5.00	3.00	2-1/2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_005.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	3:16:54 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN CANTILEVER

NB I405 STA 7694+00.00

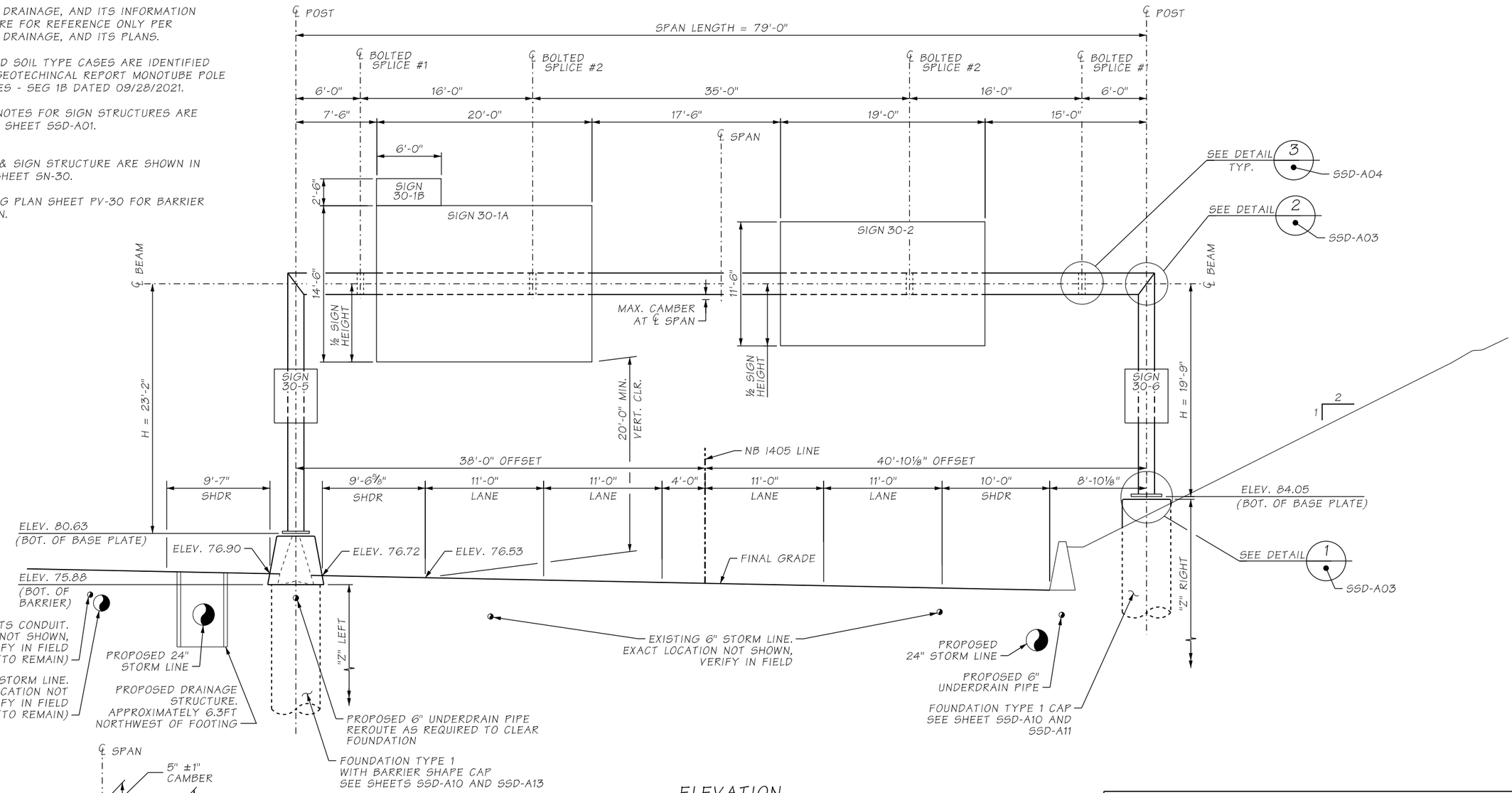
PLAN REF. NO. ST-005

SHEET OF SHEETS

SR ___ FILE NO. ___ SHEET ___

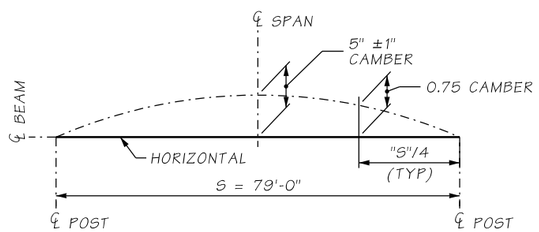
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-30.
5. SEE PAVING PLAN SHEET PV-30 FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 800 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	12'-0"	CASE 3	#9	20
RIGHT	4'-6"	14'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE																											
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3.00	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_006.dgn										
Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/10/2021				CONTRACT NO. C9242				
Time:	3:30:18 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

NB I405 STA 7726+51.00 LT
NB I405 STA 7726+56.00 RT

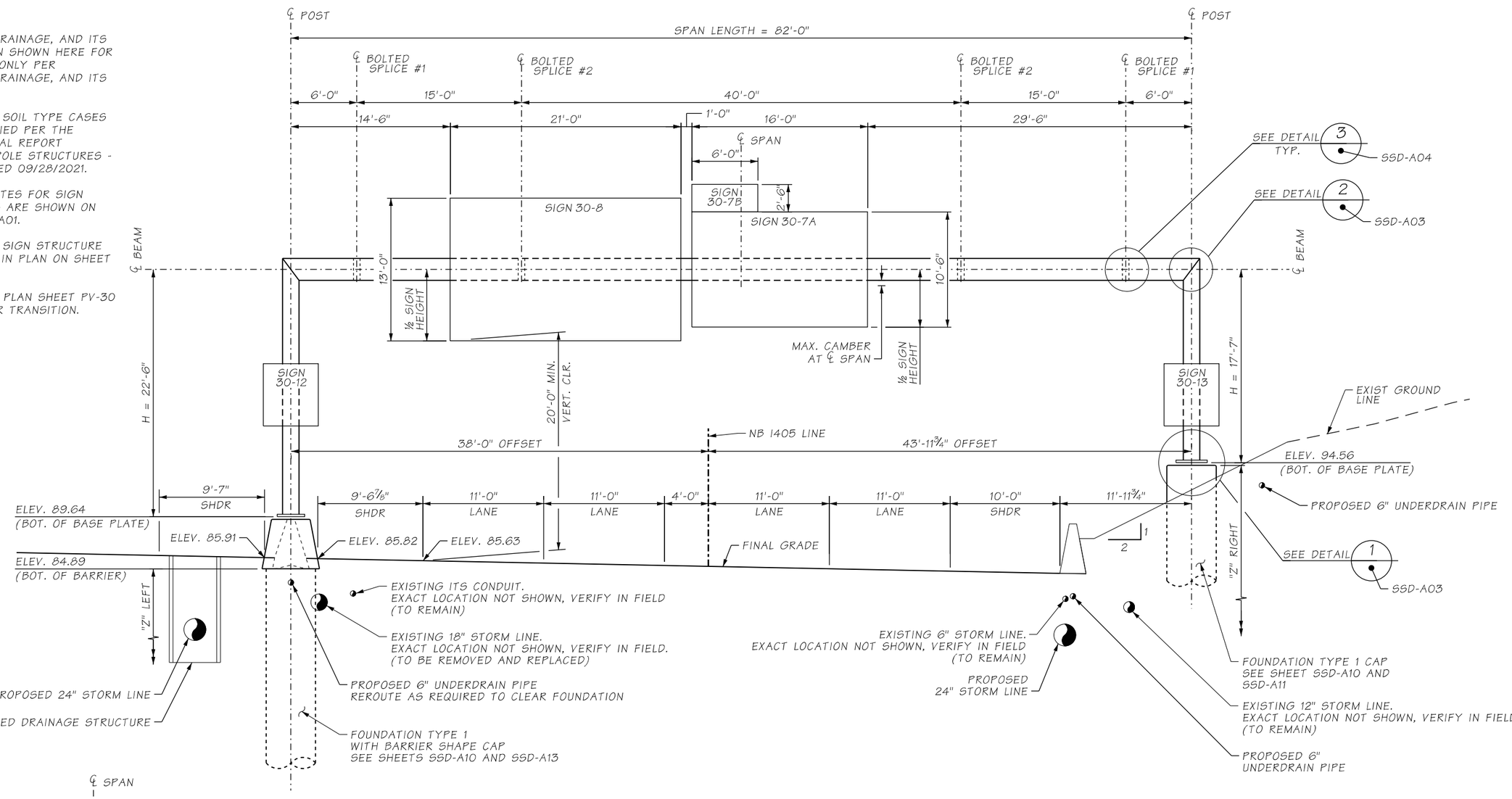
PLAN REF. NO. ST-006

SHEET OF SHEETS

SR FILE NO. SHEET

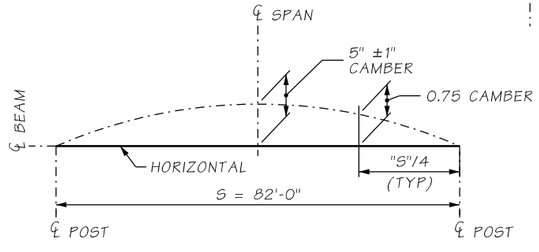
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-30.
5. SEE PAVING PLAN SHEET PV-30 FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS
STRUCTURE SHALL BE 800 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	13'-0"	CASE 5	#9	20
RIGHT	4'-6"	14'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE																									
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1					BOLTED SPLICE #2				
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3"	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_007.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	3:43:24 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURAVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

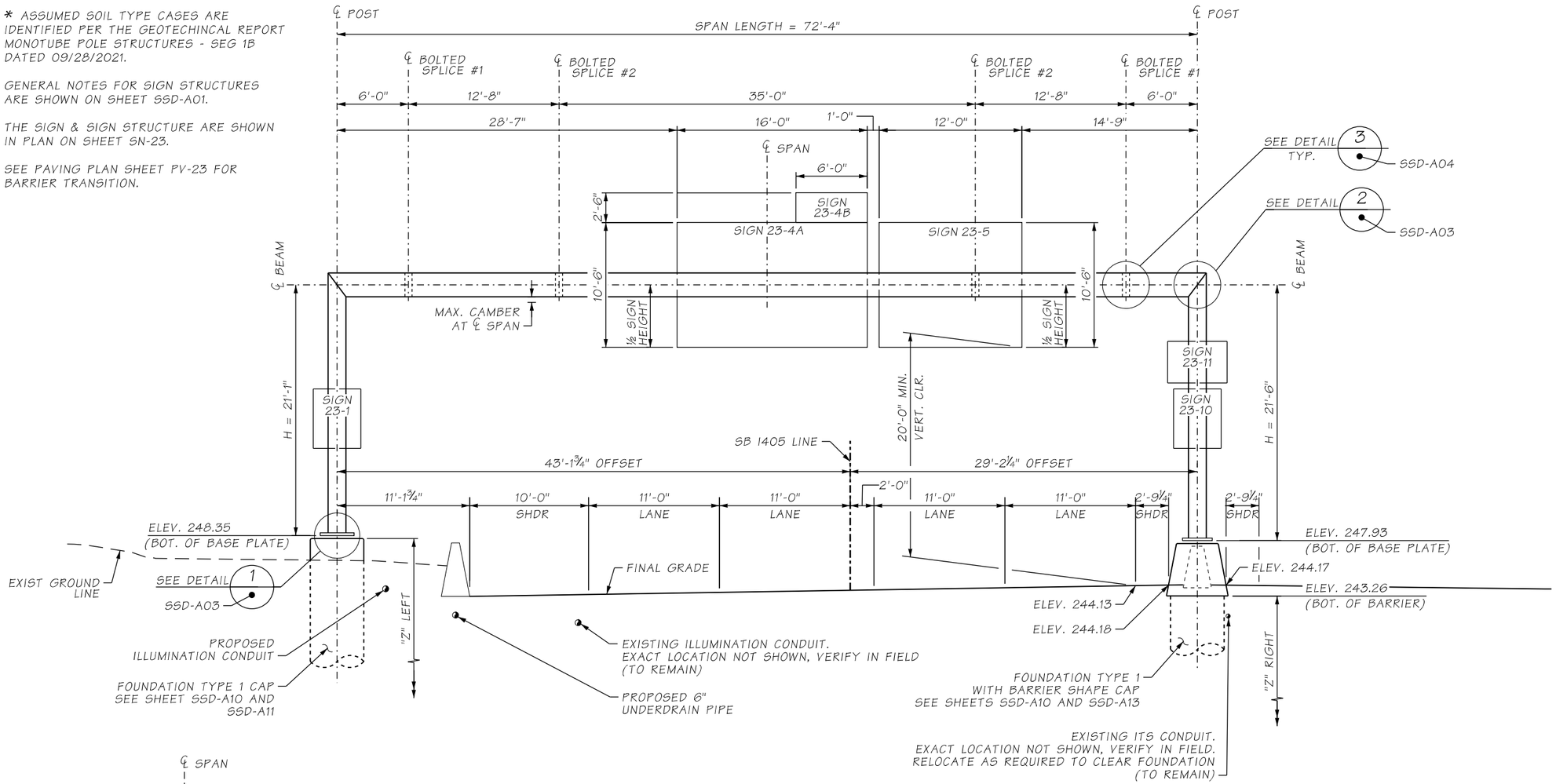
NB 1405 STA 7734+86.00 LT
NB 1405 STA 7734+84.00 RT

PLAN REF. NO. ST-007

SHEET ____ OF ____ SHEETS

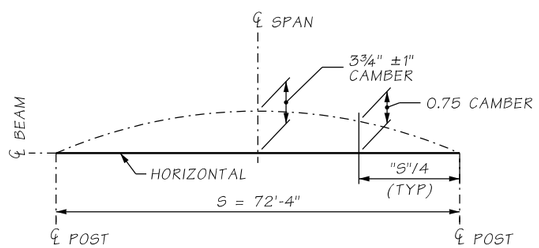
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-23.
5. SEE PAVING PLAN SHEET PV-23 FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS
STRUCTURE SHALL BE 700 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT Ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	8'-0"	CASE 2	#9	20
RIGHT	4'-6"	12'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3"	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_008.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	3:45:34 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

SB 1405 STA 5629+58.00

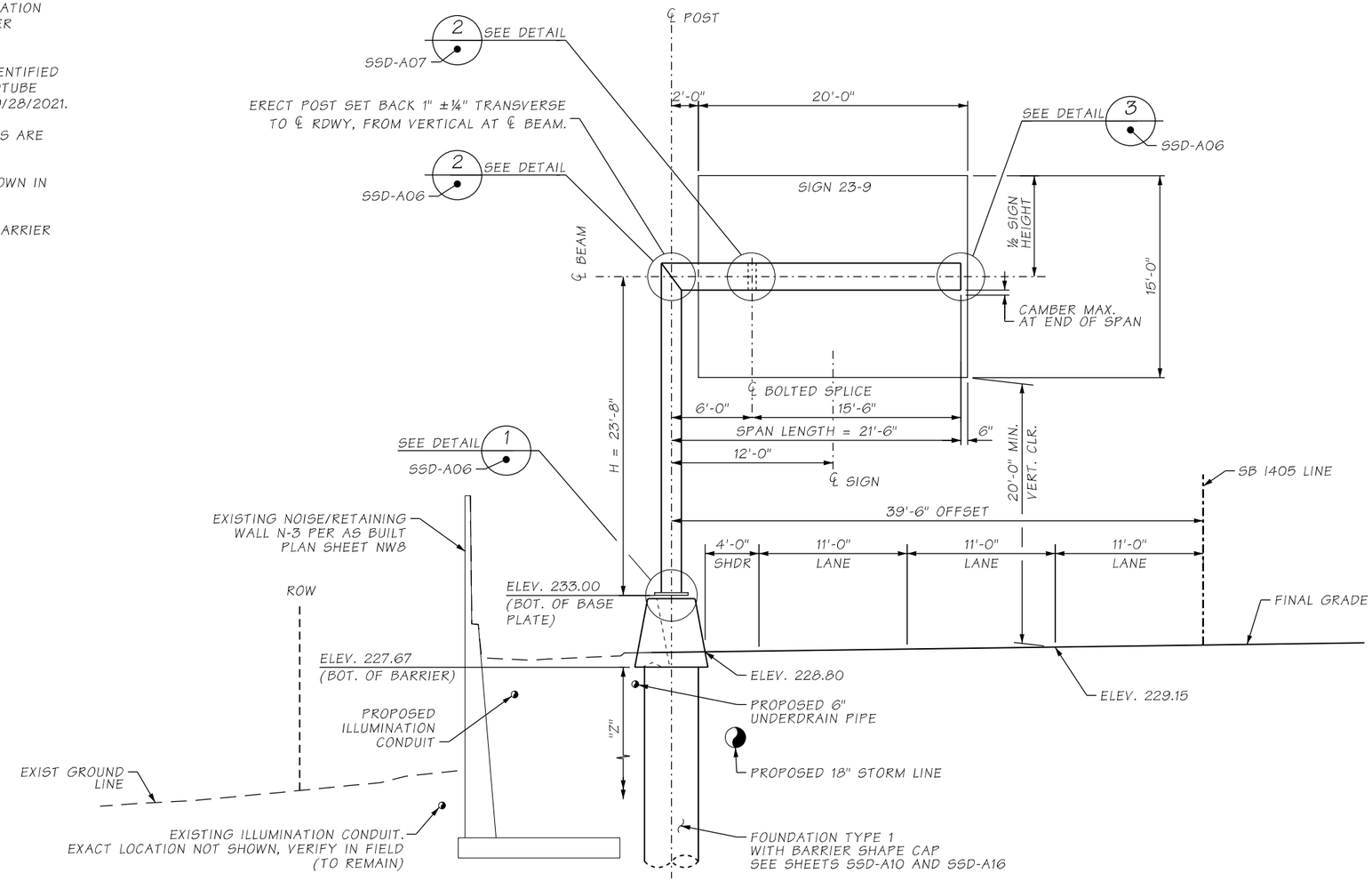
PLAN REF. NO. ST-008

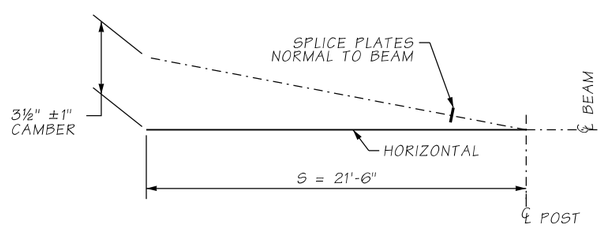
SHEET OF SHEETS

SR FILE NO. SHEET

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-23.
5. SEE PAVING PLAN SHEET PV-23 FOR BARRIER TRANSITION.





BEAM CAMBER DIAGRAM

ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 330 SQ. FT. AND Σ(XYZ) SHALL BE LESS THAN OR EQUAL TO 5363 CU. FT.

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-0"	10'-0"	CASE 5	#9	16

CANTILEVER SIGN STRUCTURE TABLE																	
POSTS (V)			BEAM A (V)			BEAM B (V)			POST BASE (V)				BOLTED SPLICE #1				
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2"	4.00	4.00	3"	3/4"	5.00	3.00	5.00	3.00	2-1/2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_009.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/9/2021								
Time:	9:35:58 AM	DESCRIPTION	DATE	NO					

SAMTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE — E.O.R. 2 STAMP BOX

Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN CANTILEVER

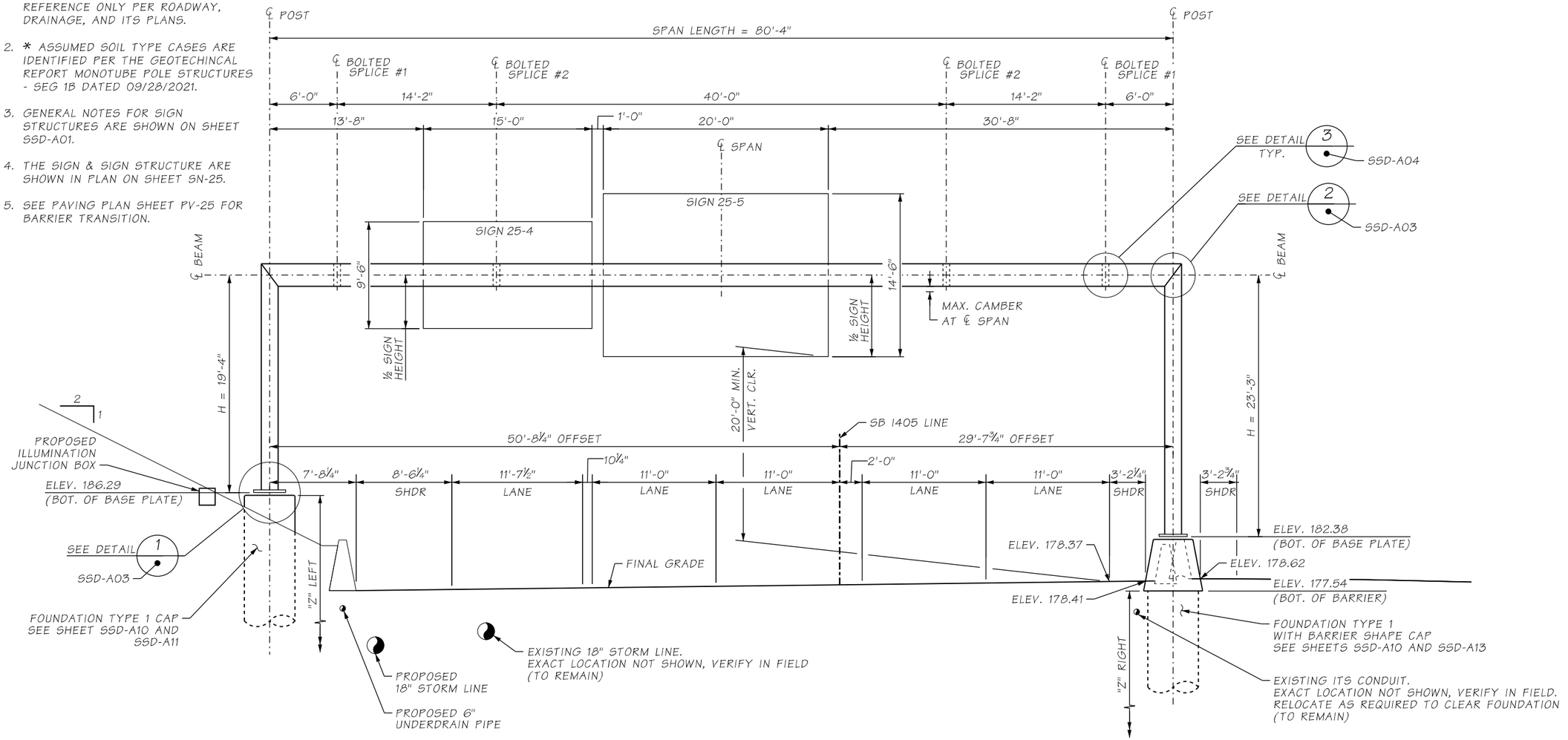
SB I405 STA 5639+20.00

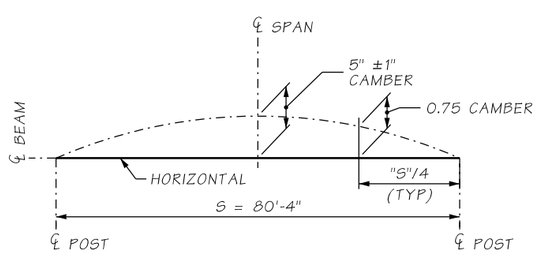
PLAN REF. NO. ST-009
SHEET
OF
SHEETS

SR ____ FILE NO. ____ SHEET ____

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-25.
5. SEE PAVING PLAN SHEET PV-25 FOR BARRIER TRANSITION.





BEAM CAMBER DIAGRAM

ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS
STRUCTURE SHALL BE 800 SQ. FT.

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	11'-0"	CASE 1	#9	20
RIGHT	4'-6"	11'-0"	CASE 1	#9	20

MONOTUBE SIGN BRIDGE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3"	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_010.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	3:48:24 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE
E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE
E.O.R. 2 STAMP BOX

Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN BRIDGE

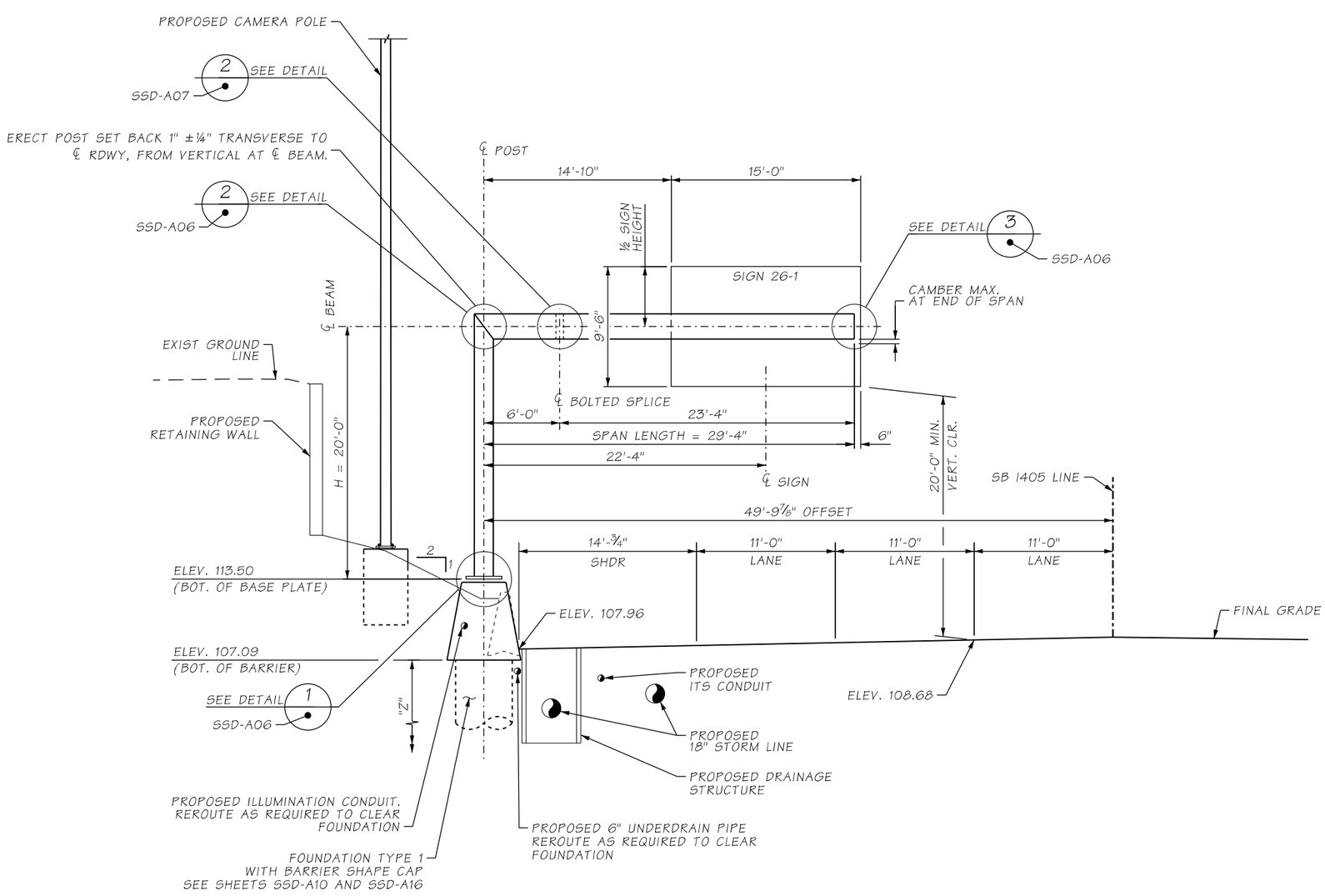
SB 1405 STA 5656+89.00

PLAN REF. NO. ST-010
SHEET OF SHEETS

SR FILE NO. SHEET

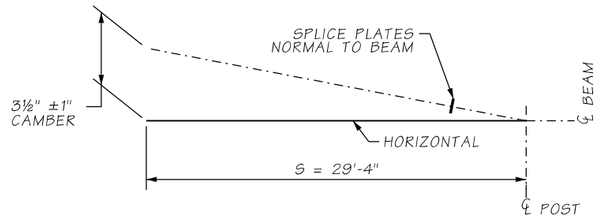
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-26.
5. SEE PAVING PLAN SHEET PV-26A FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 235 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT Ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	12'-0"	CASE 5	#9	16

CANTILEVER SIGN STRUCTURE TABLE																				
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	N/A	N/A	N/A	2"	4.00	4.00	3"	3/4"	5.00	3.00	5.00	3.00	2-1/2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_011.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	3:52:41 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R.1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE — E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN CANTILEVER

SB I405 STA 5674+04.00

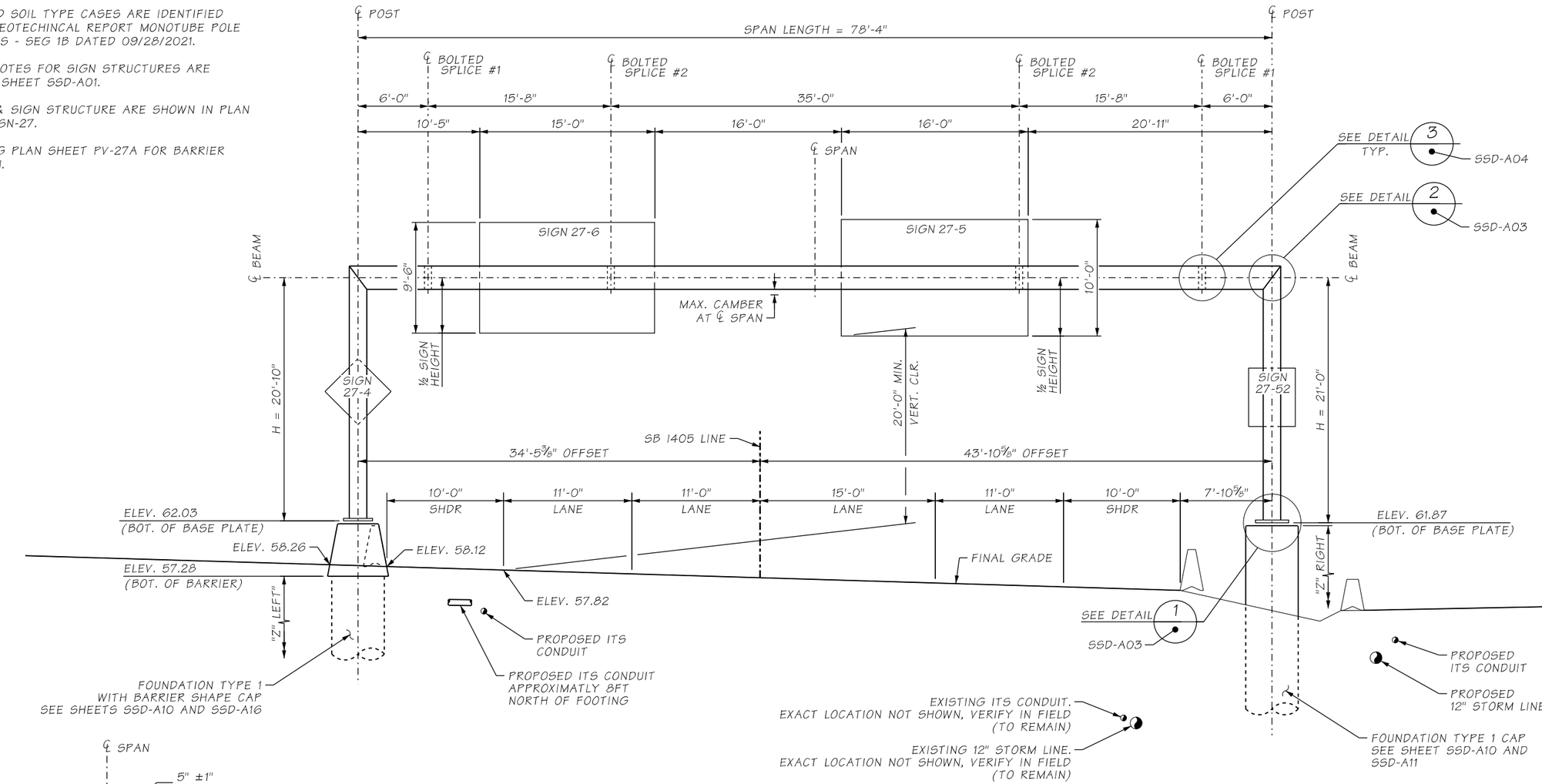
PLAN REF. NO. ST-011

SHEET OF SHEETS

SR FILE NO. SHEET

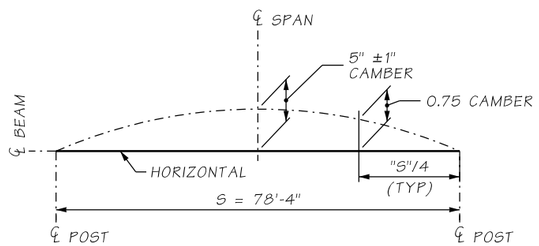
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-27.
5. SEE PAVING PLAN SHEET PV-27A FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 800 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	12'-0"	CASE 4	#9	20
RIGHT	4'-6"	13'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1					BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3.00	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_012.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	4:02:43 PM	DESCRIPTION	DATE	NO					

SAMTOSH J KURUVILLA — STATE OF WASHINGTON — 27400 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

FINAL DESIGN NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

SB 1405 STA 5689+48.00

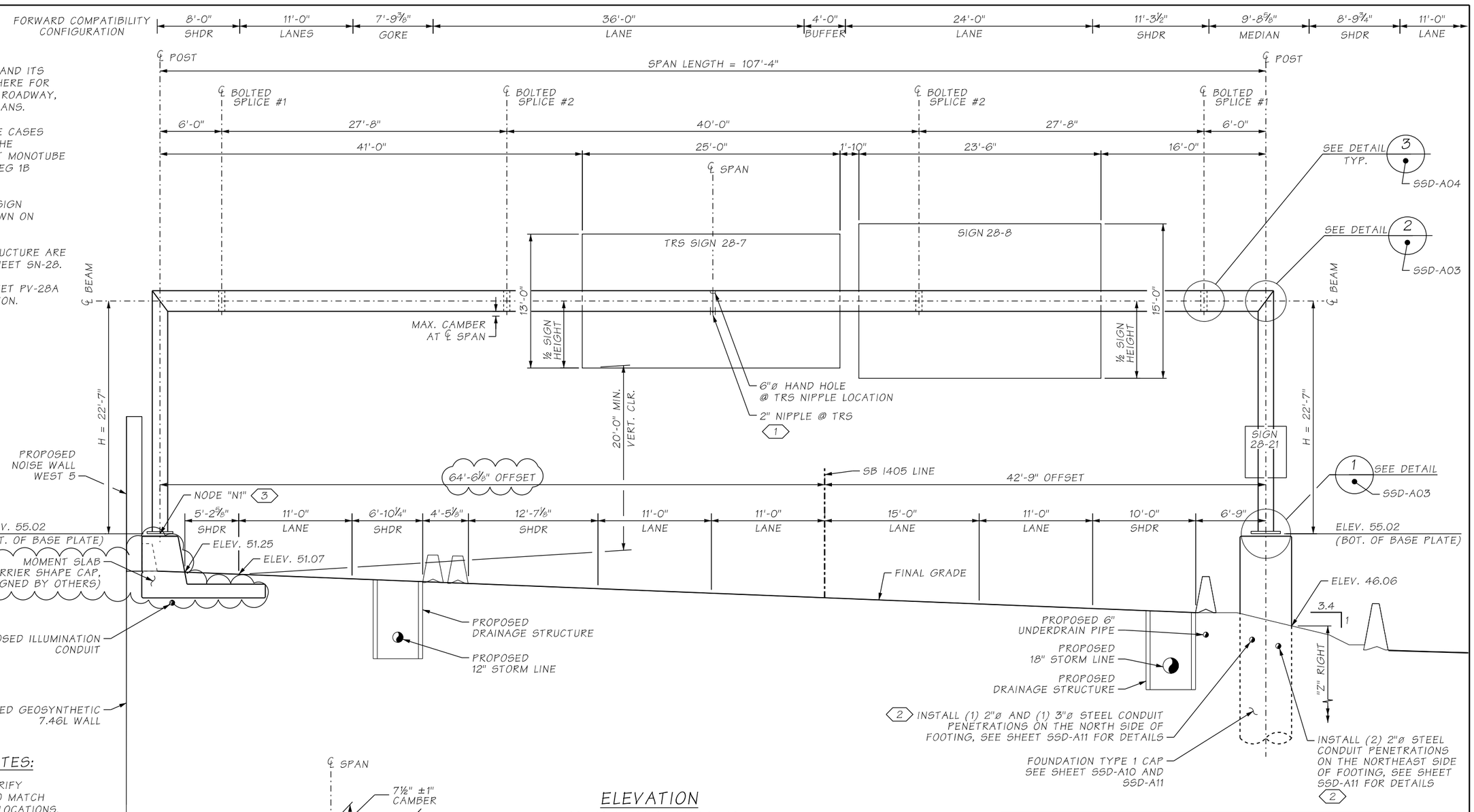
PLAN REF. NO. ST-012

SHEET OF SHEETS

SR FILE NO. SHEET

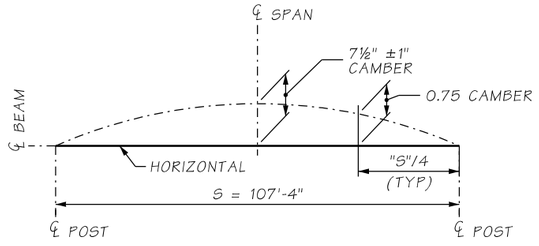
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-28.
5. SEE PAVING PLAN SHEET PV-28A FOR BARRIER TRANSITION.



CONSTRUCTION NOTES:

1. CONTRACTOR TO VERIFY NIPPLE LOCATION TO MATCH TRS SIGN CONDUIT LOCATIONS, PRIOR TO SIGN STRUCTURE FABRICATION. NO FIELD WELDING OR DRILLING SHALL BE PERMITTED.
2. 2'-0" MINIMUM BURIAL DEPTH
3. LOAD REACTION IS SHOWN ON SHEET STT-005



BEAM CAMBER DIAGRAM

ELEVATION

LOOKING AHEAD ON STATIONING THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 900 SQ. FT.

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
RIGHT	5'-0"	16'-0"	CASE 5	#11	15 BUNDLED PAIRS

MONOTUBE SIGN BRIDGE TABLE

POSTS (Y)			BEAM A (Y)			BEAM B (Y)			BEAM C (Y)			POST BASE (Y)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-9"	2'-6"	5/8"	2'-6"	2'-3"	5/8"	2'-6"	2'-3"	5/8"	2'-6"	2'-3"	5/8"	1-3/4"	4.00	5.00	3"	1"	7.00	N/A	6.00	N/A	2.00	5/8"	7.00	5.00	6.00	4.00	2-1/2"	1"

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	4:04:54 PM	DESCRIPTION	DATE	NO					

SAMTOSH J KURUVILLA — STATE OF WASHINGTON — 27400 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

SB I405 STA 5705+03.00 RT
SB I405 STA 5705+07.00 LT

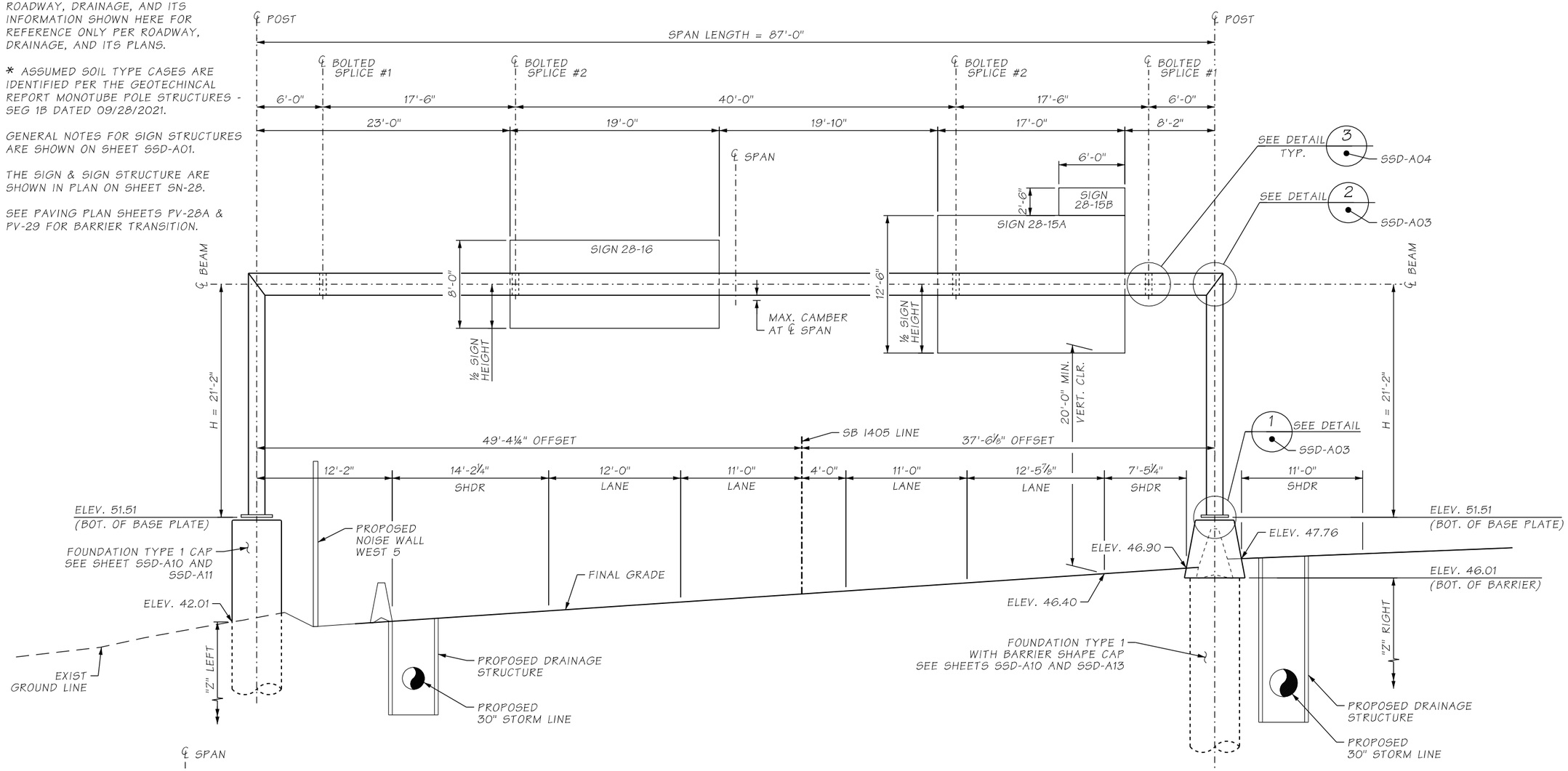
PLAN REF. NO. ST-013

SHEET OF SHEETS

SR ___ FILE NO. ___ SHEET ___

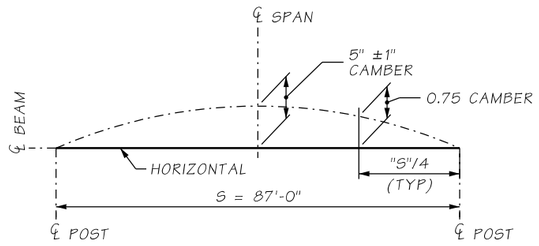
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-28.
5. SEE PAVING PLAN SHEETS PV-28A & PV-29 FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 800 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	14'-0"	CASE 5	#9	20
RIGHT	4'-6"	14'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3"	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	4:07:12 PM	DESCRIPTION	DATE	NO					

SAMTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

SB I405 STA 5714+67.00 RT
SB I405 STA 5714+72.00 LT

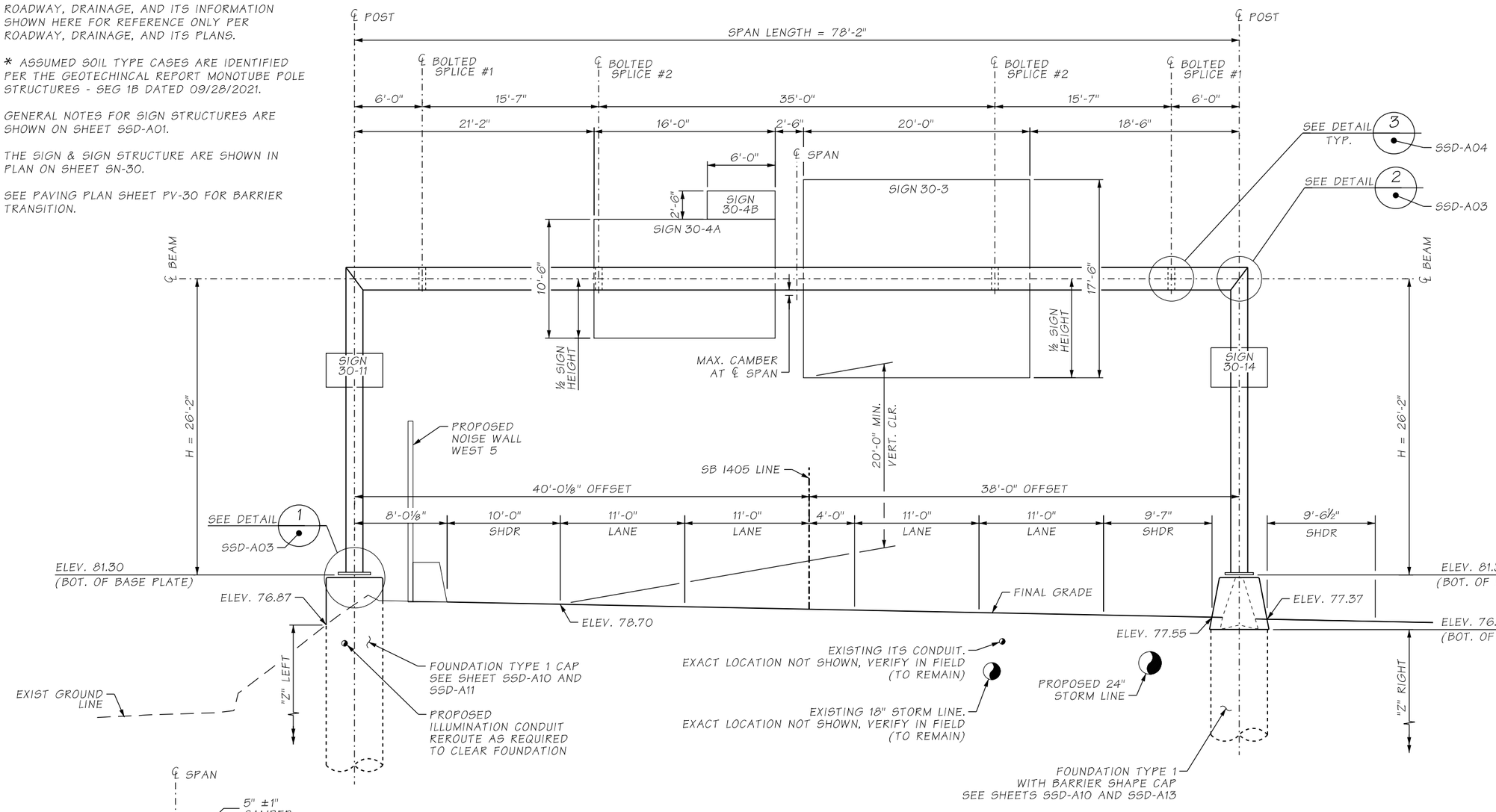
PLAN REF. NO. ST-014

SHEET OF SHEETS

SR ____ FILE NO. ____ SHEET ____

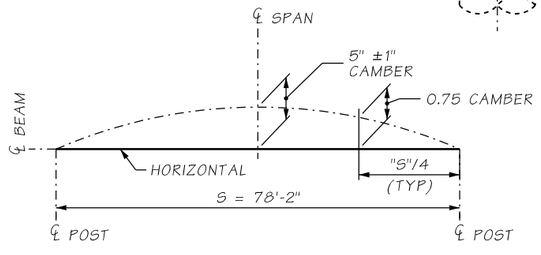
NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-30.
5. SEE PAVING PLAN SHEET PV-30 FOR BARRIER TRANSITION.



ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS
STRUCTURE SHALL BE 800 SQ. FT.



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	13'-0"	CASE 3	#9	20
RIGHT	4'-6"	13'-0"	CASE 5	#9	20

MONOTUBE SIGN BRIDGE TABLE																									
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1					BOLTED SPLICE #2				
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-3"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	2'-3"	2'-0"	5/8"	1-3/4"	4.00	4.00	3"	3/4"	6.00	N/A	5.00	N/A	2"	5/8"	6.00	N/A	5.00	N/A	2-1/4"	3/4"

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	4:09:33 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURAVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

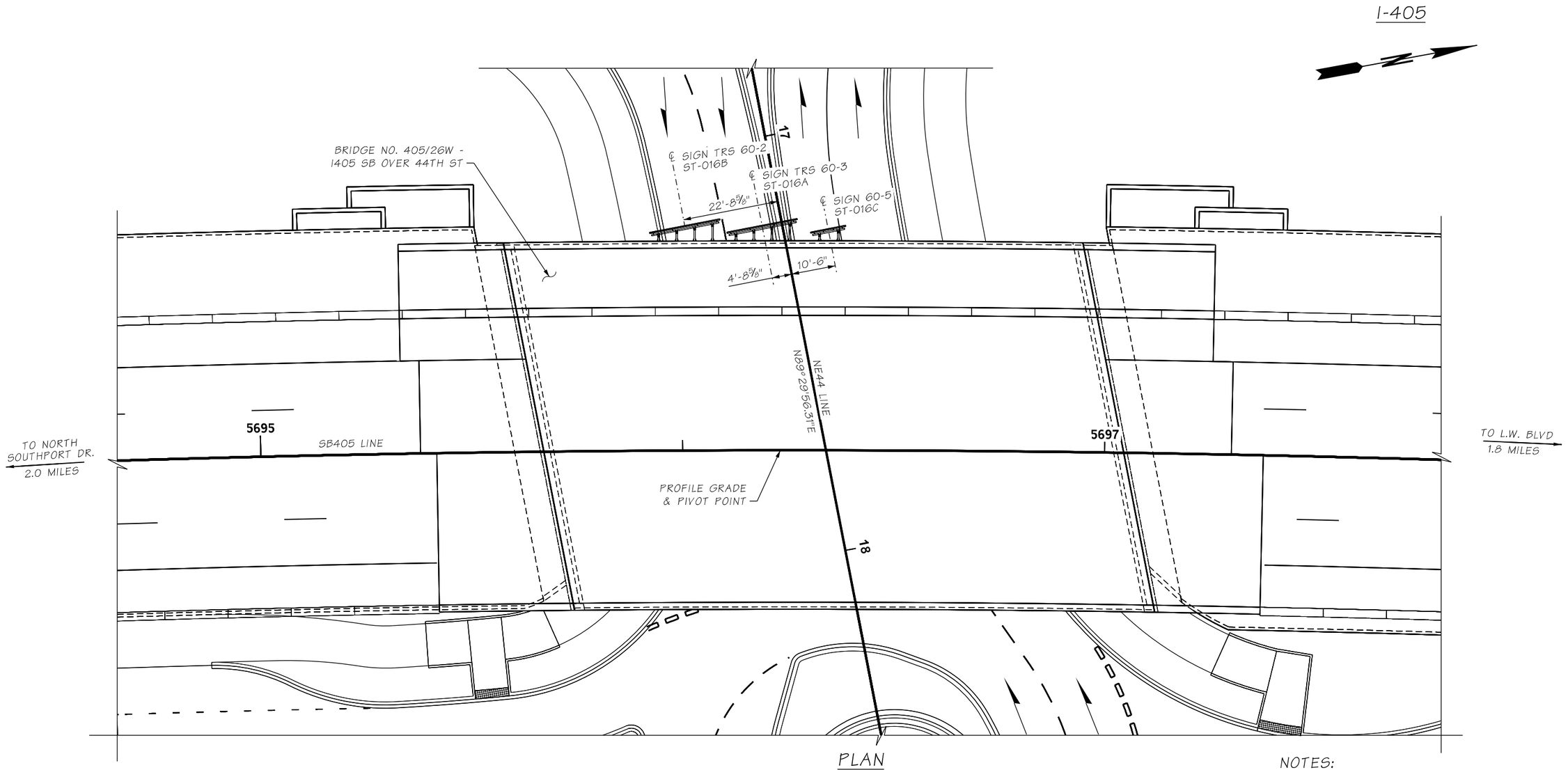
SB 1405 STA 5731+02.00 LT
SB 1405 STA 5731+07.00 RT

PLAN REF. NO. ST-015

SHEET OF SHEETS

SR ____ FILE NO. ____ SHEET ____

SEC. 29, T.24N., R.5E., WM
CITY OF RENTON



PLAN

NOTES:

1. FEATURES SHOWN ON THIS SHEET ARE BASED ON PROPOSED PLANS AND/OR FIELD SURVEY DATA. THEREFORE ALL DIMENSIONS SHALL BE FIELD MEASURED AND VERIFIED BY THE CONTRACTOR.
2. GENERAL NOTES FOR BRIDGE MOUNTED SIGNS ARE SHOWN ON SHEET SSD-A02.

SR ____ FILE NO. ____ SHEET ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/16/2021								
Time:	1:05:38 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE
E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE
E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

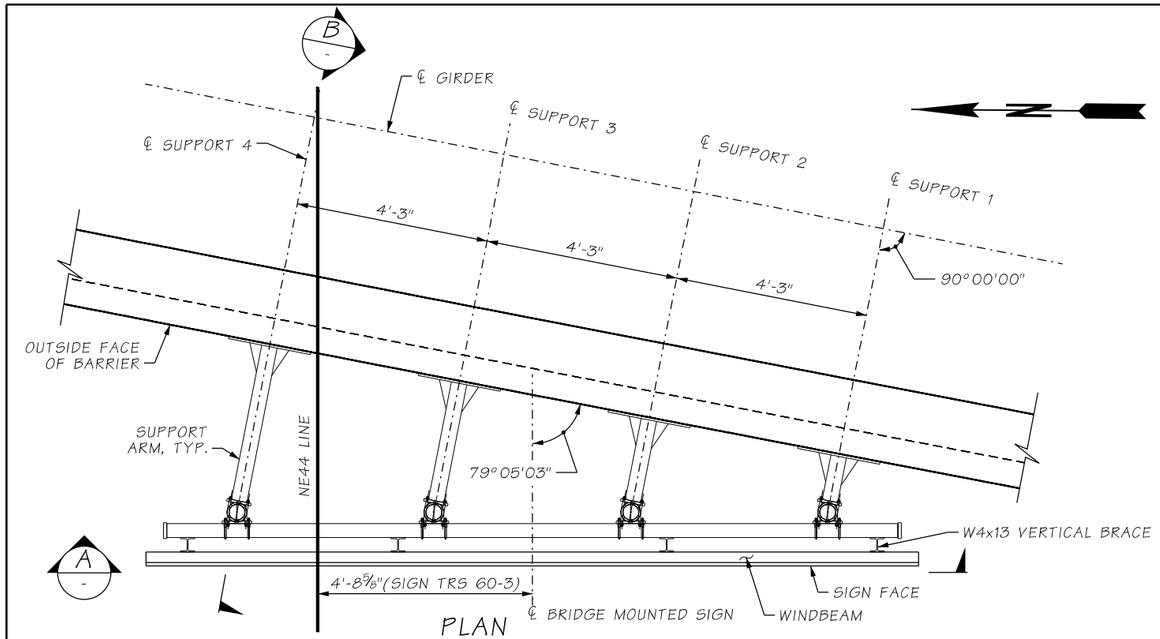
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

BRIDGE MOUNTED SIGN BRACKET

NE44 BRIDGE MOUNTED SIGN LAYOUT

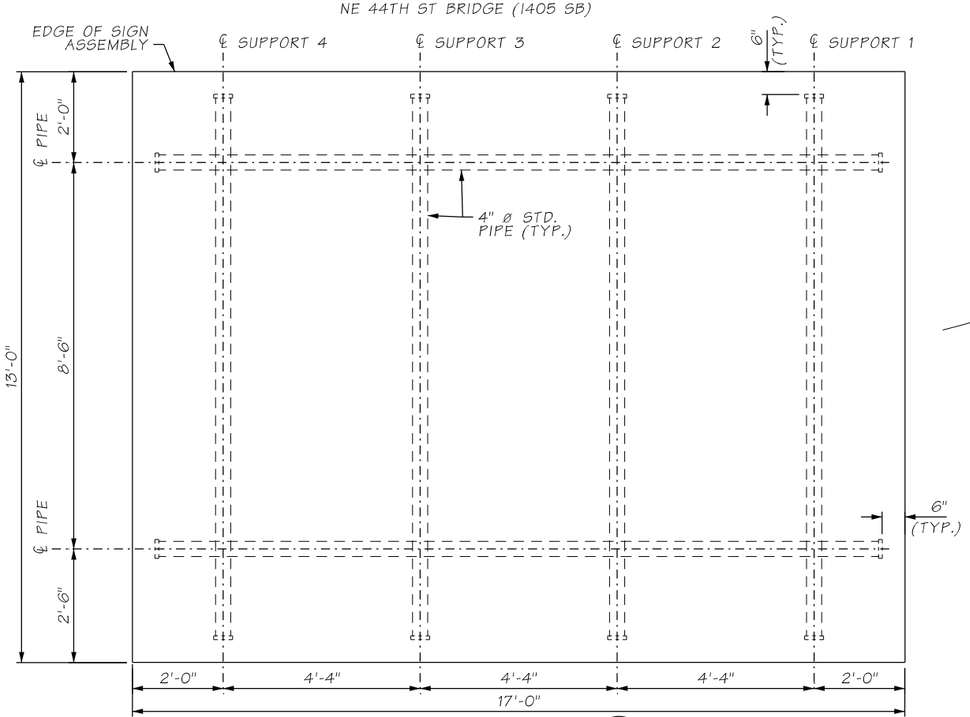
PLAN REF. NO. ST-016

SHEET ____ OF ____ SHEETS



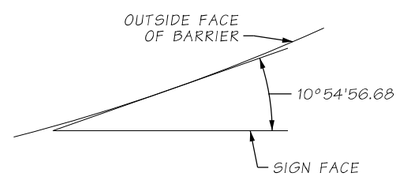
PLAN

NE 44TH ST BRIDGE (I405 SB)



VIEW A

WINDBEAMS, CONNECTIONS, & SUPPORT ARMS ARE NOT SHOWN FOR CLARITY



SKEW ANGLE

TABLE OF DIMENSIONS

SIGN	LOCATION	SIGN SKEW	SIGN NO.	SIGN LENGTH	SIGN HEIGHT
TRS 60-3	SEE PLAN	10°54'56.68	TRS 60-3	17'-0"	13'-0"

PIPE SIZE	TOP ARM LENGTHS				BOTTOM ARM LENGTHS			
	A1	A2	A3	A4	B1	B2	B3	B4
4"ø	1'-0"	1'-9¾"	2'-7⅝"	3'-5½"	4'-3½"	5'-1"	5'-10¾"	6'-8⅝"

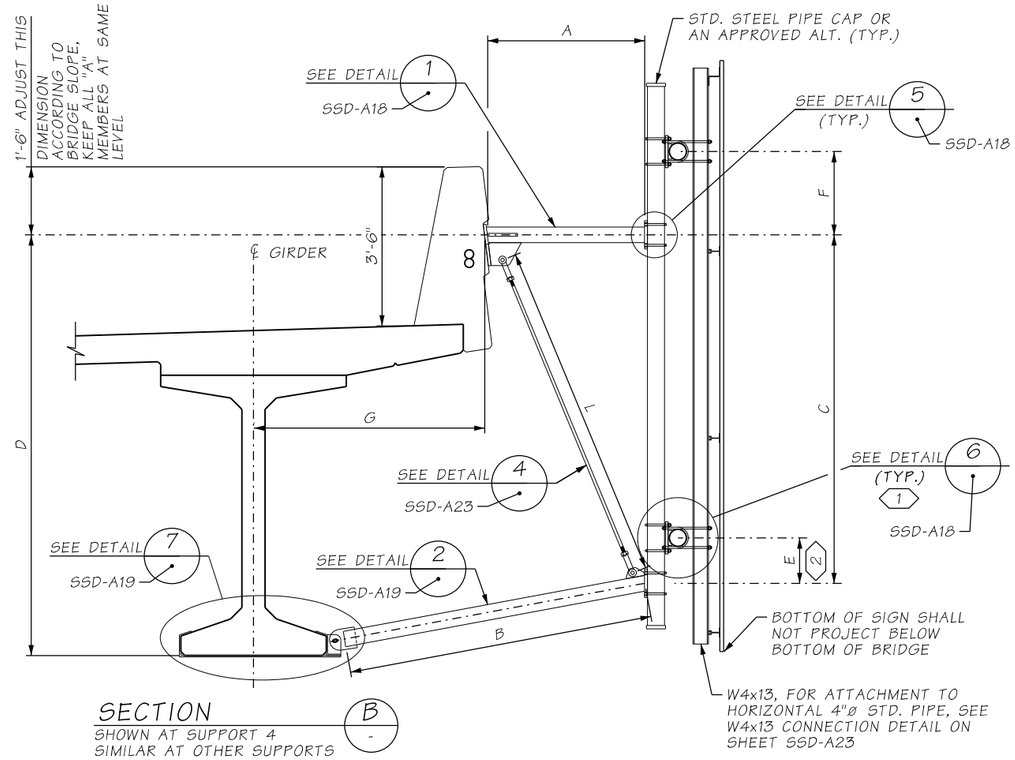
BRACING LENGTHS		CANTILEVER LENGTHS		C	D	G
L3	L4	E	F			
7'-2¼"	7'-5½"	1'-0"	1'-10"	7'-8"	9'-3"	5'-0⅞" (±¼)

NOTES:

1. FIELD VERIFY MEMBERS LENGTHS GIVEN IN THIS TABLE.
2. FIELD VERIFY ALL DIMENSIONS.
3. SIGN ASSEMBLY PER STANDARD PLAN G-90.10 INCLUDES WINDBEAM, VERTICAL BRACES, & ASSEMBLIES' INTERNAL CONNECTIONS (SIGN PANEL TO WINDBEAMS TO VERTICAL BRACES)
4. GENERAL NOTES FOR BRIDGE MOUNTED SIGNS ARE SHOWN ON SHEET SSD-A02.
5. THE SIGN PANEL & TRS ARE IDENTIFIED ON PLAN SHEET SN-60.

CONSTRUCTION NOTES:

1. KEEP ALL VERTICAL PIPES PLUMB, AND HORIZONTAL PIPES LEVEL.
2. THIS DIMENSION CAN BE VARIED TO PLACE SIGN HORIZONTAL



SECTION B

SHOWN AT SUPPORT 4
SIMILAR AT OTHER SUPPORTS

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/16/2021				CONTRACT NO. C9242				
Time:	1:09:06 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27410 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

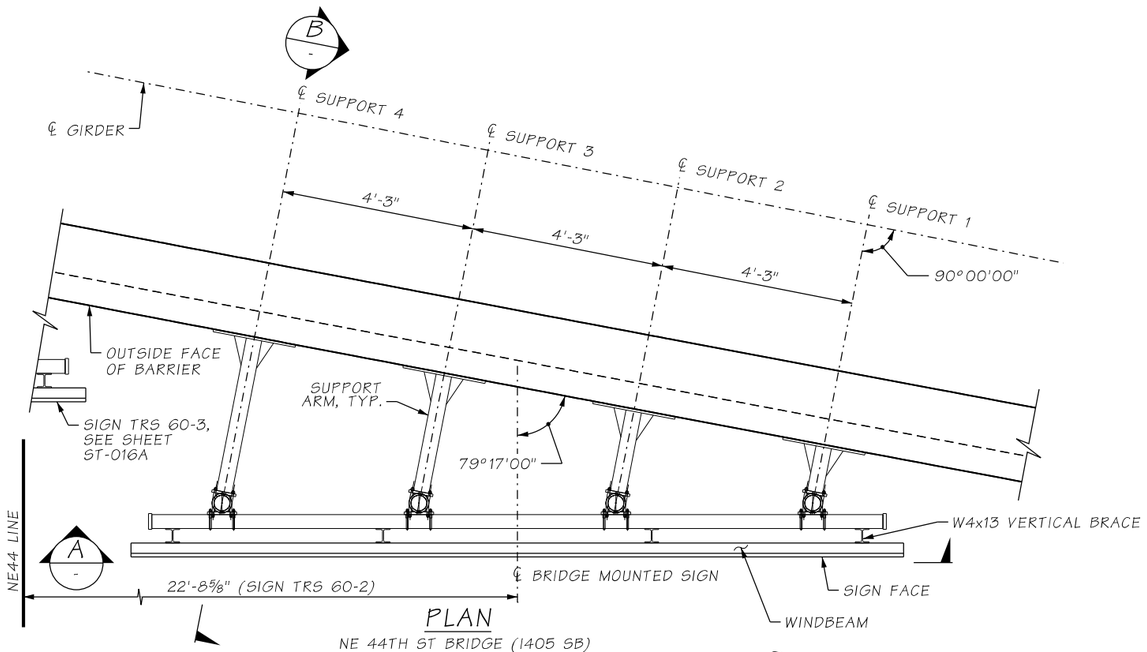
BRIDGE MOUNTED SIGN BRACKET

NE44 STA 17+20.57

PLAN REF. NO. ST-016A

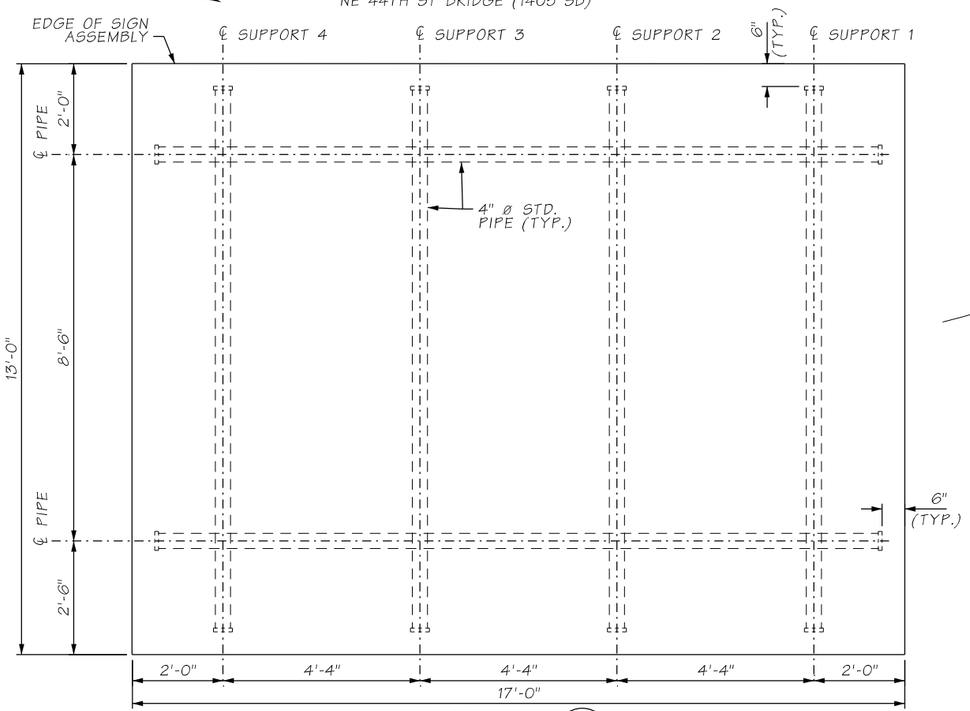
SHEET OF SHEETS

SR FILE NO. SHEET



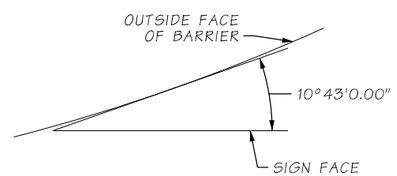
PLAN

NE 44TH ST BRIDGE (1405 SB)



VIEW A

WINDBEAMS, CONNECTIONS, & SUPPORT ARMS ARE NOT SHOWN FOR CLARITY



SKEW ANGLE

TABLE OF DIMENSIONS

SIGN	LOCATION	SIGN SKEW	SIGN NO.	SIGN LENGTH	SIGN HEIGHT
TRS 60-2	SEE PLAN	10°43'0.00"	TRS 60-2	17'-0"	13'-0"

PIPE SIZE	TOP ARM LENGTHS				BOTTOM ARM LENGTHS			
	A1	A2	A3	A4	B1	B2	B3	B4
4"ø	1'-0"	1'-9⅝"	2'-7¼"	3'-5"	4'-2⅛"	4'-11¾"	5'-9½"	6'-7⅜"

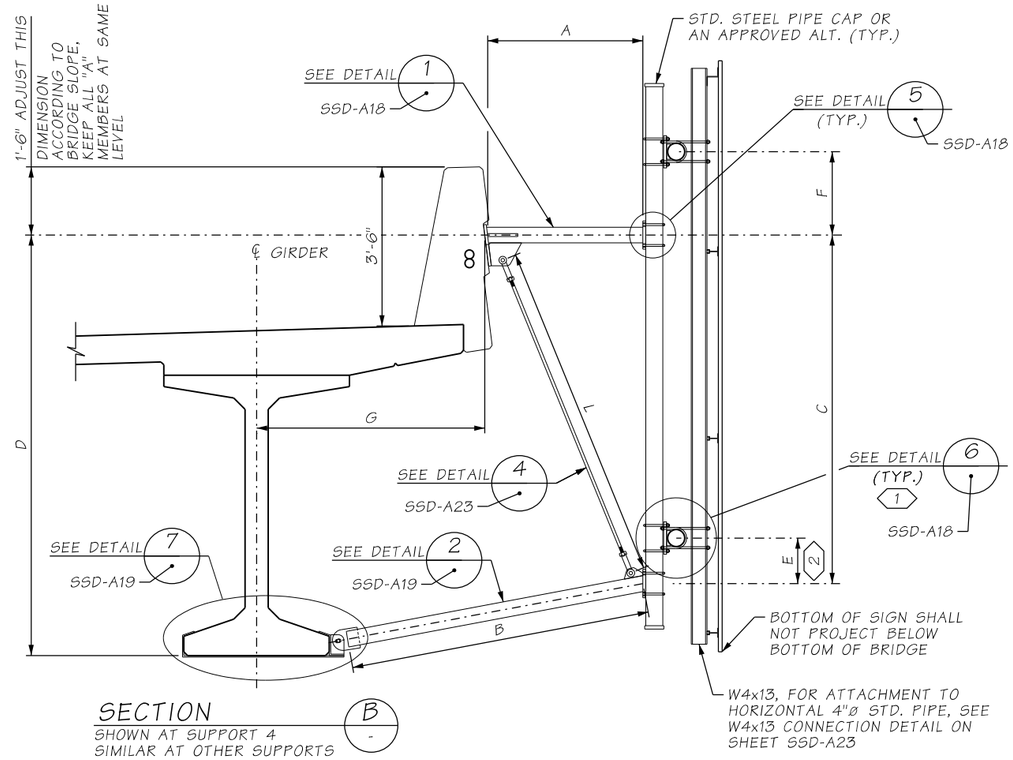
BRACING LENGTHS		CANTILEVER LENGTHS		C	D	G
L3	L4	E	F			
7'-2⅛"	7'-5¼"	1'-0"	1'-10"	7'-8"	9'-3"	4'-11¾" (±½)

NOTES:

1. FIELD VERIFY MEMBERS LENGTHS GIVEN IN THIS TABLE.
2. FIELD VERIFY ALL DIMENSIONS.
3. SIGN ASSEMBLY PER STANDARD PLAN G-90.10 INCLUDES WINDBEAM, VERTICAL BRACES, & ASSEMBLIES' INTERNAL CONNECTIONS (SIGN PANEL TO WINDBEAMS TO VERTICAL BRACES).
4. GENERAL NOTES FOR BRIDGE MOUNTED SIGNS ARE SHOWN ON SHEET SSD-A02.
5. THE SIGN PANEL & TRS ARE IDENTIFIED ON PLAN SHEET SN-60.

CONSTRUCTION NOTES:

1. KEEP ALL VERTICAL PIPES PLUMB, AND HORIZONTAL PIPES LEVEL.
2. THIS DIMENSION CAN BE VARIED TO PLACE SIGN HORIZONTAL.



SECTION B

SHOWN AT SUPPORT 4
SIMILAR AT OTHER SUPPORTS

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_016B.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/16/2021								
Time:	1:11:47 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27410 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

DATE

E.O.R. 2 STAMP BOX

FINAL DESIGN NOT FOR CONSTRUCTION

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

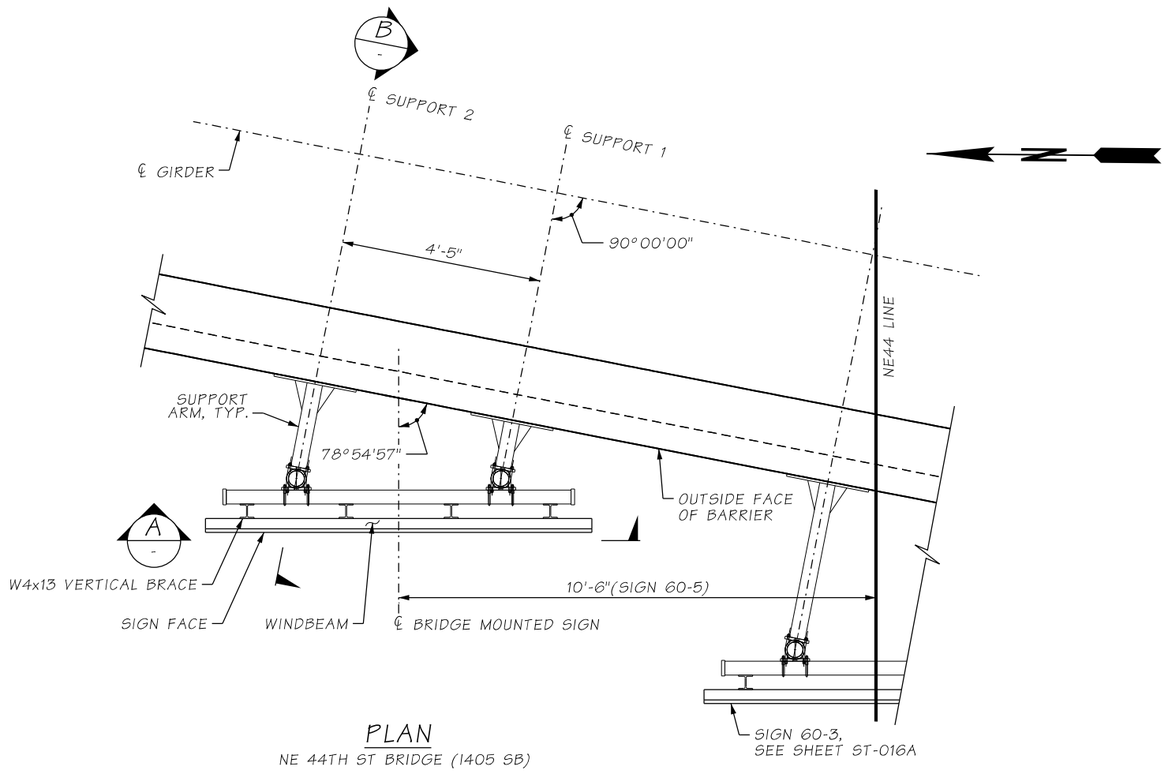
BRIDGE MOUNTED SIGN BRACKET

NE44 STA 17+17.16

PLAN REF. NO. ST-016B

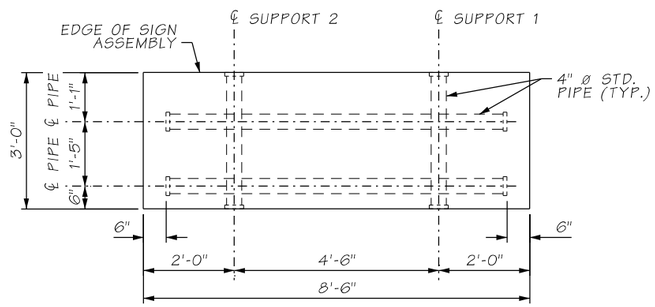
SHEET OF SHEETS

SR FILE NO. SHEET



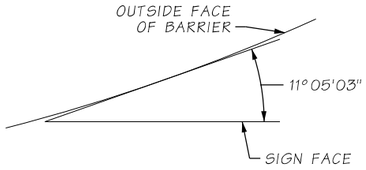
PLAN

NE 44TH ST BRIDGE (1405 SB)



VIEW A -

WINDBEAMS, CONNECTIONS, & SUPPORT ARMS ARE NOT SHOWN FOR CLARITY



SKEW ANGLE

TABLE OF DIMENSIONS

SIGN	LOCATION	SIGN SKEW	SIGN NO.	SIGN LENGTH	SIGN HEIGHT
60-5	SEE PLAN	11°05'03"	60-5	8'-6"	3'-0"

PIPE SIZE	TOP ARM LENGTHS		BOTTOM ARM LENGTHS	
	B1	B2	B1	B2
4"ø	1'-0"	1'-10⅜"	11⅝"	1'-10"

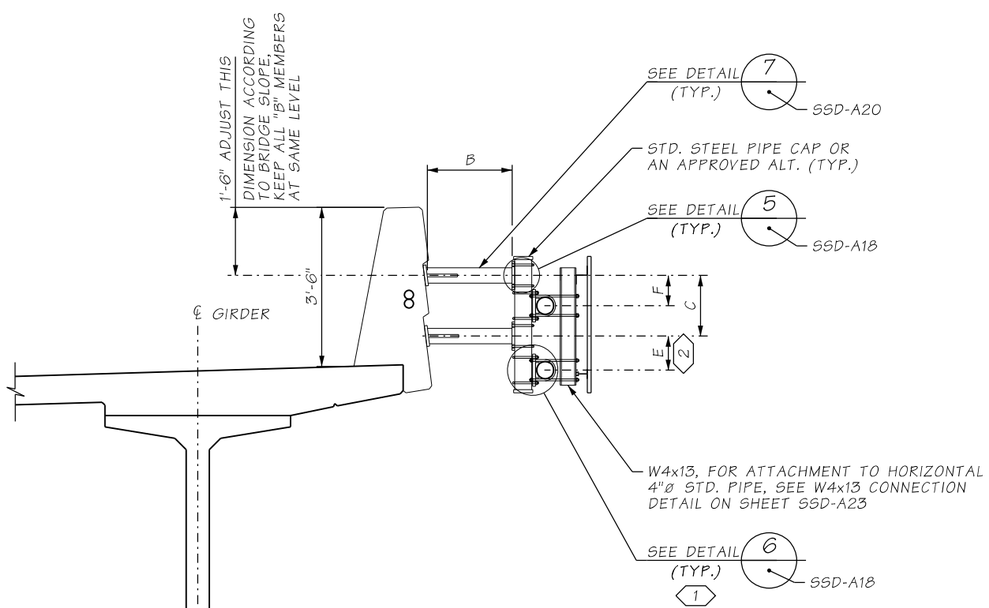
CANTILEVER LENGTHS		C
E	F	
9"	8"	1'-4"

NOTES:

1. FIELD VERIFY MEMBERS LENGTHS GIVEN IN THIS TABLE.
2. FIELD VERIFY ALL DIMENSIONS.
3. SIGN ASSEMBLY PER STANDARD PLAN G-90.10 INCLUDES WINDBEAM, VERTICAL BRACES, & ASSEMBLIES' INTERNAL CONNECTIONS (SIGN PANEL TO WINDBEAMS TO VERTICAL BRACES).
4. GENERAL NOTES FOR BRIDGE MOUNTED SIGNS ARE SHOWN ON SHEET SSD-A02.

CONSTRUCTION NOTES:

1. KEEP ALL VERTICAL PIPES PLUMB, AND HORIZONTAL PIPES LEVEL.
2. THIS DIMENSION CAN BE VARIED TO PLACE SIGN HORIZONTAL.



SECTION B -

SHOWN AT SUPPORT 2
SIMILAR AT OTHER SUPPORTS

SHEET
FILE NO.
SR

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_016C.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/16/2021				CONTRACT NO. C9242				
Time:	1:16:04 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

DATE — E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

BRIDGE MOUNTED SIGN BRACKET

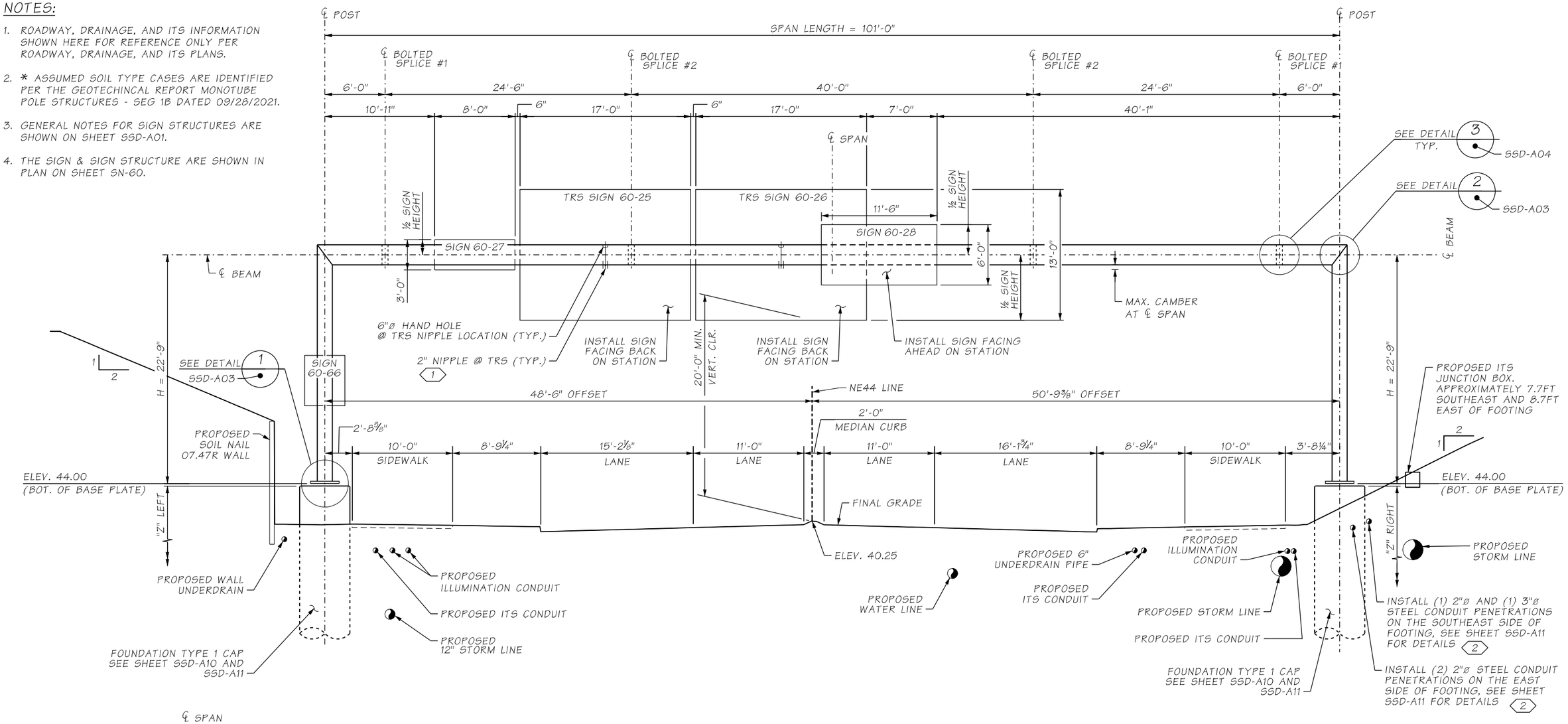
NE44 STA 17+24.34

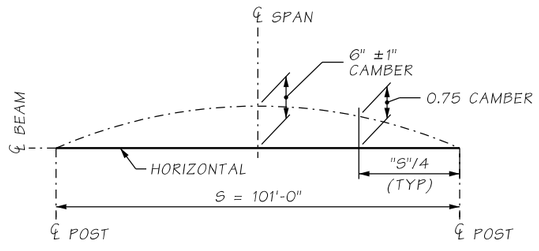
PLAN REF. NO. ST-016C

SHEET OF SHEETS

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR SIGN STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & SIGN STRUCTURE ARE SHOWN IN PLAN ON SHEET SN-60.





BEAM CAMBER DIAGRAM

ELEVATION

LOOKING AHEAD ON STATIONING
THE MAXIMUM SIGN AREA ON THIS STRUCTURE SHALL BE 900 SQ. FT.

CONSTRUCTION NOTES:

1. CONTRACTOR TO VERIFY NIPPLE LOCATION TO MATCH TRS SIGN CONDUIT LOCATIONS, PRIOR TO SIGN STRUCTURE FABRICATION. NO FIELD WELDING OR DRILLING SHALL BE PERMITTED.
2. 2'-0" MINIMUM BURIAL DEPTH

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	5'-0"	14'-0"	CASE 5	#11	15 BUNDLED PAIRS
RIGHT	5'-0"	13'-0"	CASE 2	#11	15 BUNDLED PAIRS

MONOTUBE SIGN BRIDGE TABLE																													
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-9"	2'-6"	5/8"	2'-6"	2'-3"	5/8"	2'-6"	2'-3"	5/8"	2'-6"	2'-3"	5/8"	1-3/4"	4.00	5.00	3"	1"	7.00	N/A	6.00	N/A	2.00	5/8"	7.00	5.00	6.00	4.00	2-1/2"	1"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_017.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/10/2021								
Time:	4:14:02 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN BRIDGE

NE44 STA 21+00.00 RT
NE44 STA 21+18.00 LT

PLAN REF. NO. ST-017

SHEET OF SHEETS

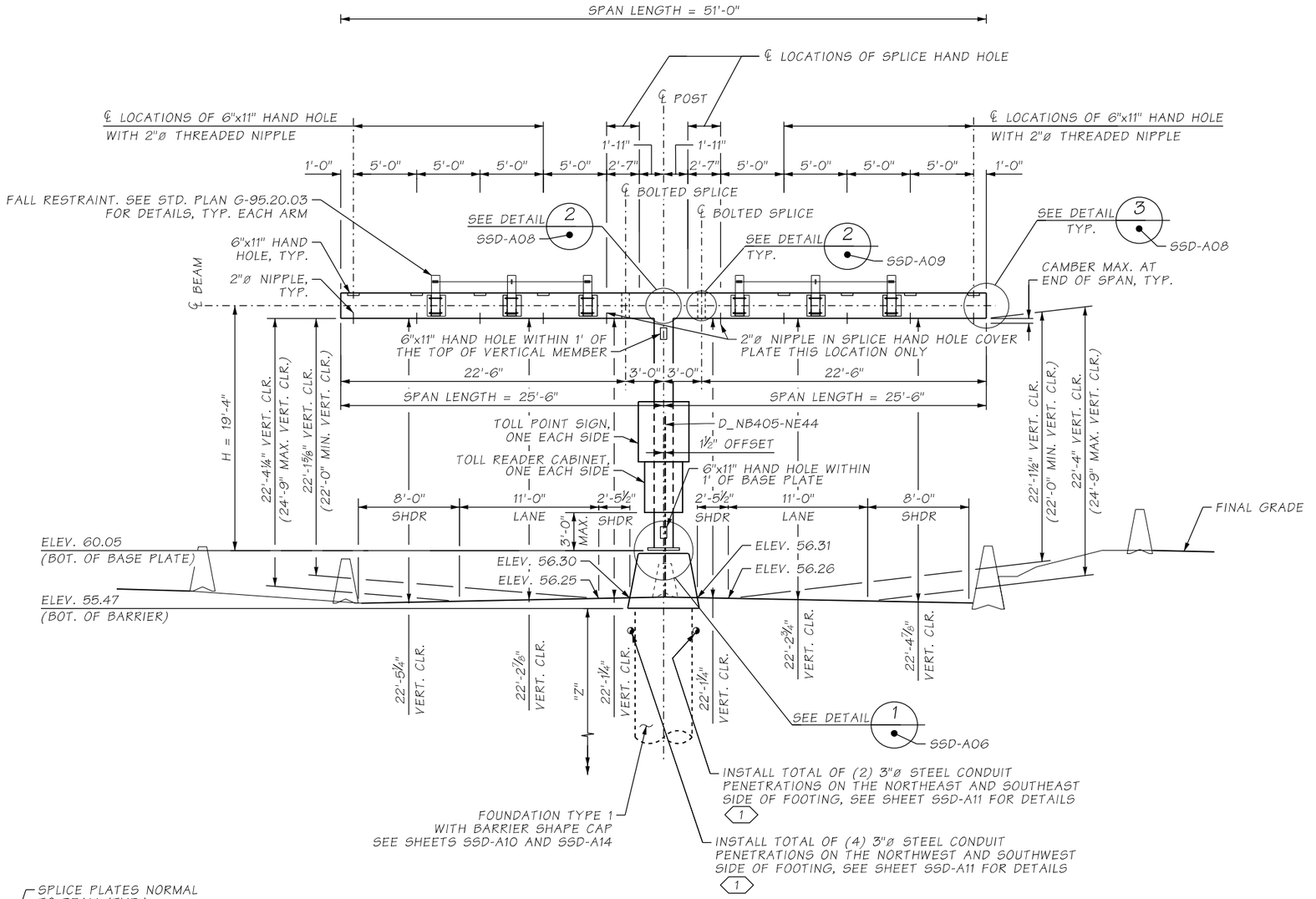
SR FILE NO. SHEET

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR GANTRY STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & TOLL GANTRY STRUCTURE ARE SHOWN IN PLAN ON SHEETS SN-27 & TS-27.
5. SEE PAVING PLAN SHEET PV-27A FOR BARRIER TRANSITION.
6. TOTAL MOMENT DUE TO TOLL VENDOR EQUIPMENT SHOULD NOT EXCEED 30997.5 #-FT

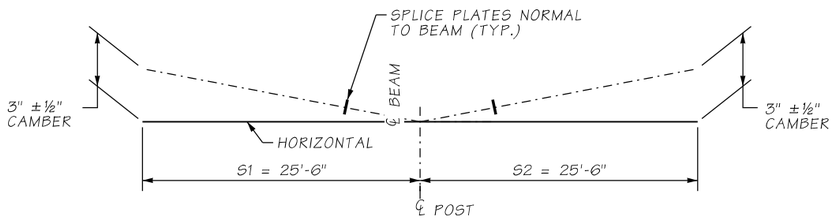
CONSTRUCTION NOTES:

⟨1⟩ 2'-0" MINIMUM BURIAL DEPTH



ELEVATION

TOLL POINT 405R##
LOOKING AHEAD ON STATIONING



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	10'-0"	CASE 5	#9	20

TOLL STRUCTURE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	5/8"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	1-1/2"	4.00	4.00	3"	3/4"	5.00	N/A	5.00	N/A	2"	5/8"	5.00	N/A	5.00	N/A	2"	5/8"

SHEET
FILE NO.
SR

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_018.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/17/2021								
Time:	8:05:36 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

TOLL GANTRY DBL. CANTILEVER

D_NB405-NE44 STA 686+05.00

PLAN REF. NO. ST-018

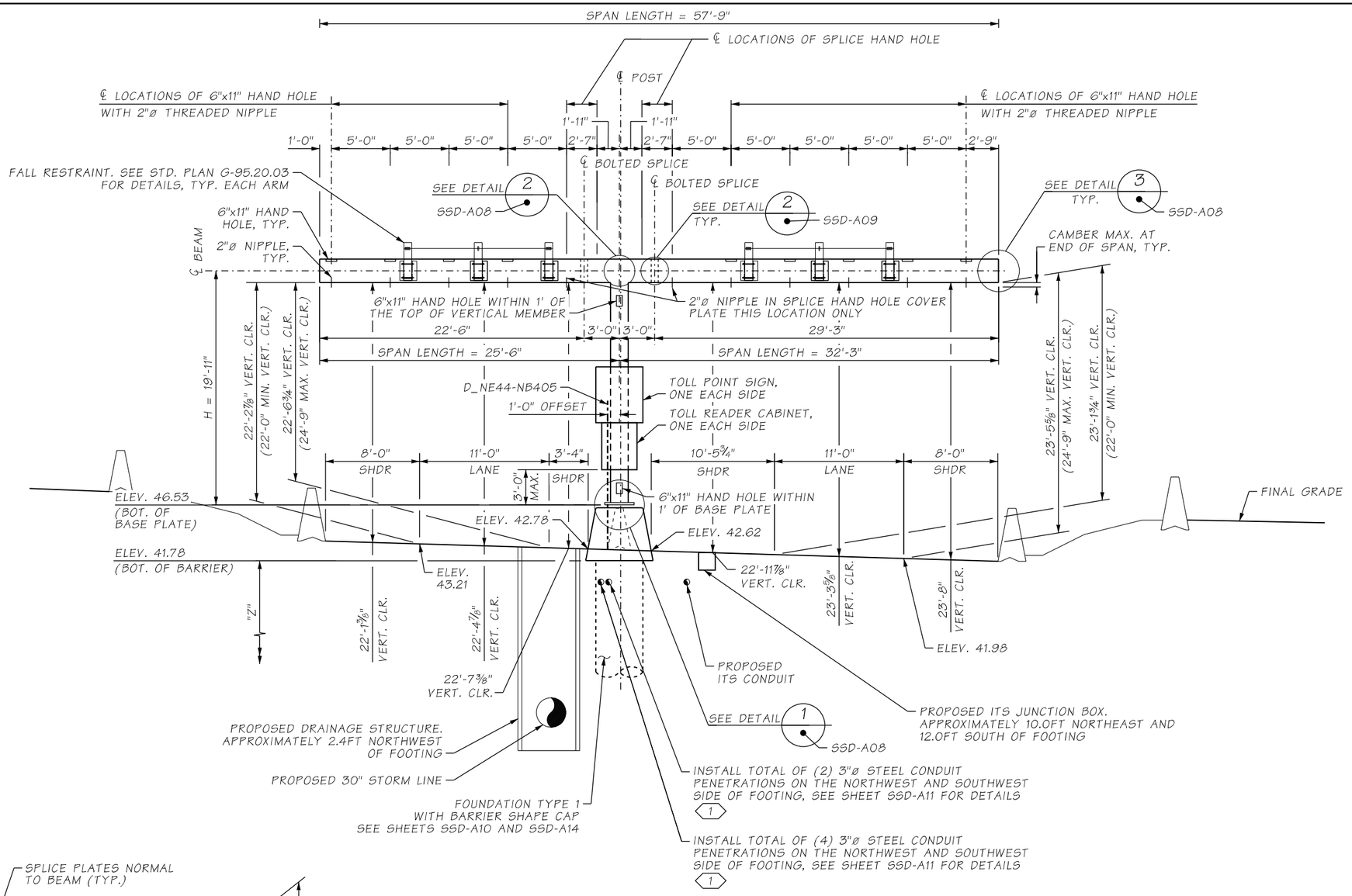
SHEET OF SHEETS

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR GANTRY STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & TOLL GANTRY STRUCTURE ARE SHOWN IN PLAN ON SHEETS SN-28 & TS-28.
5. SEE PAVING PLAN SHEET PV-28A FOR BARRIER TRANSITION.
6. TOTAL MOMENT DUE TO TOLL VENDOR EQUIPMENT SHOULD NOT EXCEED 55312.5 #-FT

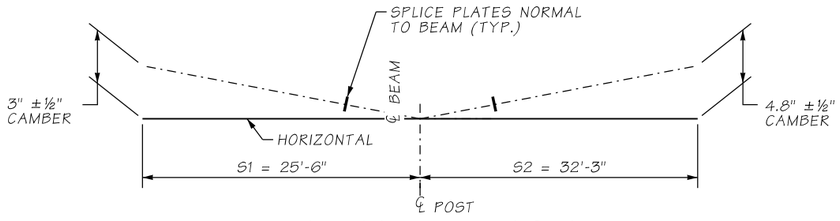
CONSTRUCTION NOTES:

1 2'-0" MINIMUM BURIAL DEPTH



ELEVATION

TOLL POINT 405R##
LOOKING AHEAD ON STATIONING



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
RIGHT	4'-0"	10'-0"	CASE 5	#9	20

TOLL STRUCTURE TABLE																									
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	3/4"	2'-0"	2'-0"	5/8"	2'-0"	2'-0"	5/8"	2'-0"	2'-0"	5/8"	1-1/2"	4.00	4.00	3"	3/4"	5.00	N/A	5.00	N/A	2"	5/8"	5.00	N/A	5.00	N/A	2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_019.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/17/2021								
Time:	8:06:33 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA STATE OF WASHINGTON 27430 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

TOLL GANTRY DBL. CANTILEVER

D_NE44-NB405 STA 701+19.00

PLAN REF. NO. ST-019

SHEET OF SHEETS

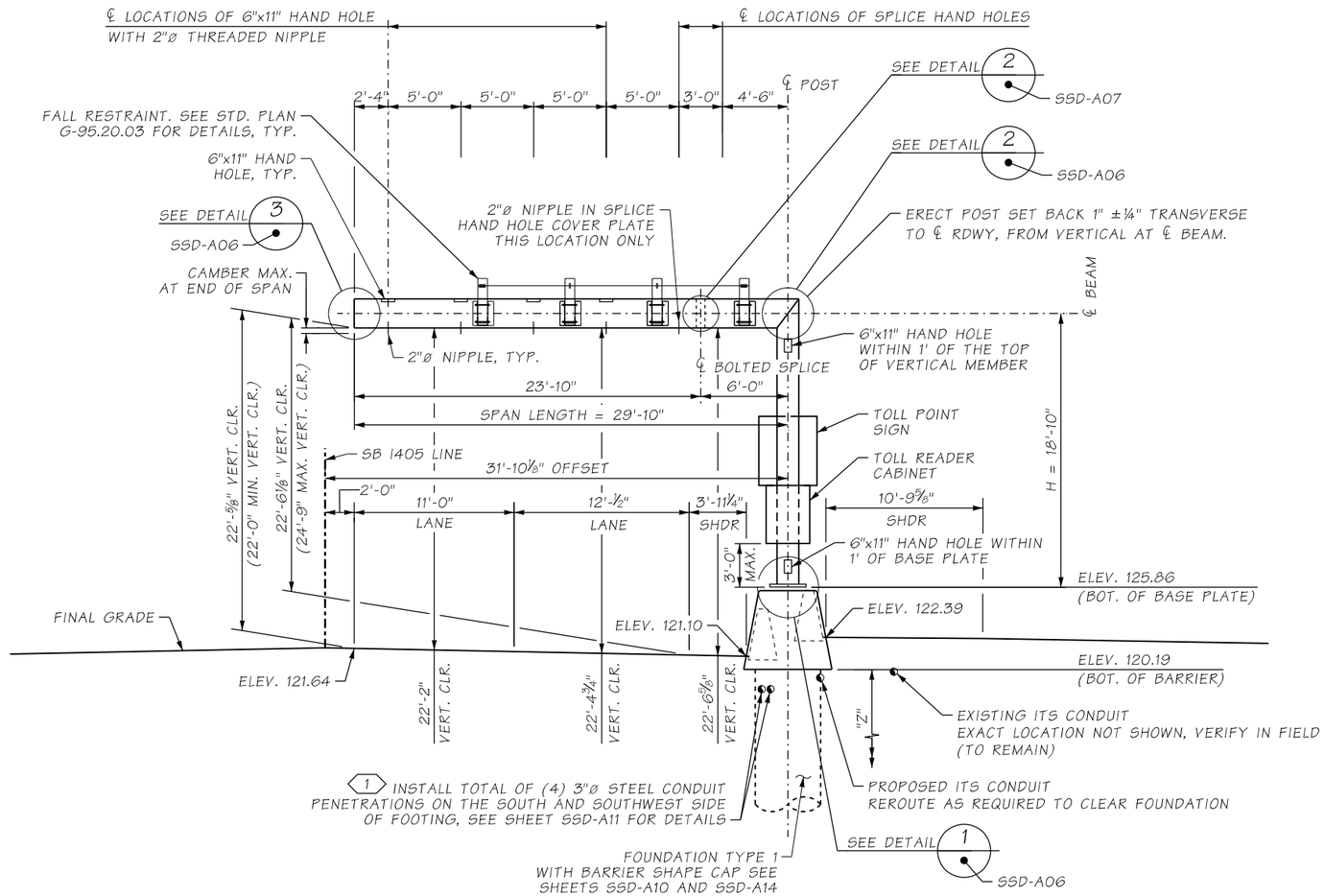
SR FILE NO. SHEET

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR GANTRY STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & TOLL GANTRY STRUCTURE ARE SHOWN IN PLAN ON SHEETS SN-26 & TS-26.
5. SEE PAVING PLAN SHEET PV-26 FOR BARRIER TRANSITION.
6. TOTAL MOMENT DUE TO TOLL VENDOR EQUIPMENT SHOULD NOT EXCEED 55710.0 #-FT

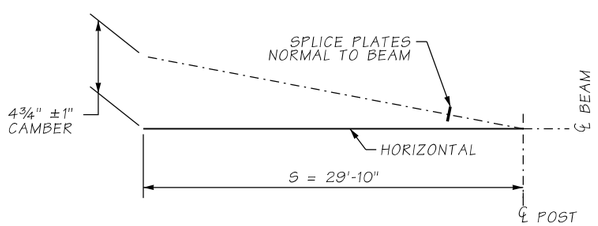
CONSTRUCTION NOTES:

⟨1⟩ 2'-0" MINIMUM BURIAL DEPTH



ELEVATION

TOLL POINT 405RSB##
LOOKING AHEAD ON STATIONING



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
RIGHT	4'-6"	10'-0"	CASE 4	#9	20

TOLL STRUCTURE TABLE

POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	1-1/2"	4.00	4.00	3"	3/4"	5.00	N/A	5.00	N/A	2"	5/8"	5.00	N/A	5.00	N/A	2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_020.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/17/2021				CONTRACT NO. C9242				
Time:	8:07:19 AM	DESCRIPTION	DATE	NO					

SAMTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

TOLL GANTRY CANTILEVER

SB I405 STA 5670+85.00

PLAN REF. NO. ST-020

SHEET OF SHEETS

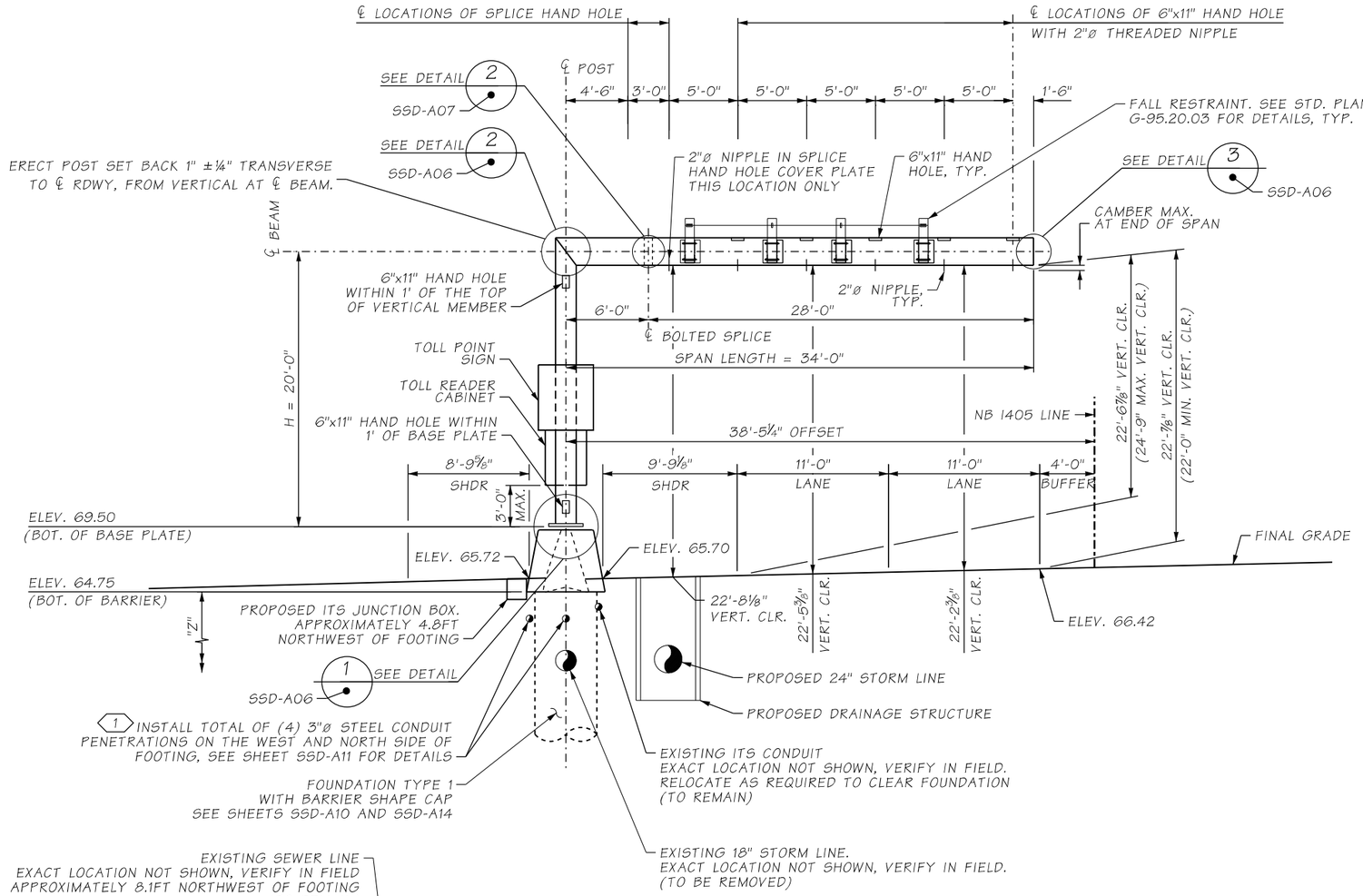
SR ___ FILE NO. ___ SHEET ___

NOTES:

1. ROADWAY, DRAINAGE, AND ITS INFORMATION SHOWN HERE FOR REFERENCE ONLY PER ROADWAY, DRAINAGE, AND ITS PLANS.
2. * ASSUMED SOIL TYPE CASES ARE IDENTIFIED PER THE GEOTECHINCAL REPORT MONOTUBE POLE STRUCTURES - SEG 1B DATED 09/28/2021.
3. GENERAL NOTES FOR GANTRY STRUCTURES ARE SHOWN ON SHEET SSD-A01.
4. THE SIGN & TOLL GANTRY STRUCTURE ARE SHOWN IN PLAN ON SHEETS SN-29 & TS-29.
5. SEE PAVING PLAN SHEET PV-29 FOR BARRIER TRANSITION.
6. TOTAL MOMENT DUE TO TOLL VENDOR EQUIPMENT SHOULD NOT EXCEED 76200.0 #-FT

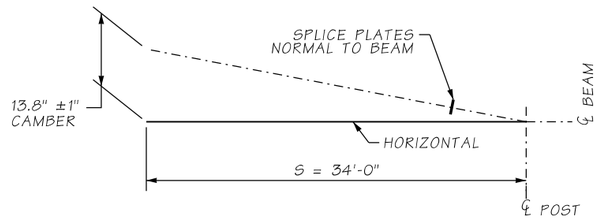
CONSTRUCTION NOTES:

1 2'-0" MINIMUM BURIAL DEPTH



ELEVATION

TOLL POINT 405RNB##
LOOKING AHEAD ON STATIONING



BEAM CAMBER DIAGRAM

FOUNDATION (TYPE 1)					
OFFSET	SHAFT ø	DEPTH ("Z")	SOIL CASE *	VERTICAL REBAR SIZE ("X")	NO. OF VERTICAL BARS ("Y")
LEFT	4'-6"	10'-0"	CASE 5	#9	20

TOLL STRUCTURE TABLE																									
POSTS (V)			BEAM A (V)			BEAM B (V)			BEAM C (V)			POST BASE (V)					BOLTED SPLICE #1						BOLTED SPLICE #2					
"A"	"B"	"T1"	"B"	"C"	"T2"	"B"	"C"	"T2"	"B"	"C"	"T2"	"D1"	"S5"	"S6"	"T3"	"T6"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"	"S1"	"S2"	"S3"	"S4"	"T4"	"T5"
1'-6"	2'-0"	1"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	2'-0"	2'-0"	1/2"	1-1/2"	4.00	4.00	3"	3/4"	5.00	N/A	5.00	N/A	2"	5/8"	5.00	N/A	5.00	N/A	2"	5/8"

C:\pwworking\wsdot\dms16392\XL5467_DE_ST_021.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/17/2021								
Time:	8:08:20 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE — E.O.R. 2 STAMP BOX

Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
TOLL GANTRY CANTILEVER

NB I405 STA 7720+92.00

PLAN REF. NO. ST-021

SHEET OF SHEETS

SR ___ FILE NO. ___ SHEET ___

SIGN STRUCTURE & TOLL GANTRY GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION DATED 2018, AMENDMENTS, AND GENERAL SPECIAL PROVISIONS.

2. THE SIGN STRUCTURES DESIGN AND ANALYSIS HAS BEEN DONE IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS - FIRST EDITION - DATED 2015 (INCLUDING LATEST INTERIMS), USING BASIC WIND SPEED OF 115 MPH, WITH A MEAN RECURRENCE INTERVAL OF 1700 YEARS AND A FATIGUE CATEGORY I.

3. SIGN STRUCTURE FOUNDATIONS BASED ON GEOTECH REPORT:
   - SEGMENT 1A - GEOTECHNICAL DESIGN RECOMMENDATIONS FOR MONOTUBE POLE STRUCTURES - SEGMENT 1A, DATED NOVEMBER 19, 2021.
   - SEGMENT 1B - GEOTECHNICAL DESIGN RECOMMENDATIONS FOR MONOTUBE POLE STRUCTURES - SEGMENT 1B, DATED SEPTEMBER 28, 2021.
   - SEGMENT 2A - GEOTECHNICAL DESIGN RECOMMENDATIONS FOR MONOTUBE POLE STRUCTURES - SEGMENT 2A, DATED NOVEMBER 9, 2021.
   - SEGMENT 2B - GEOTECHNICAL DESIGN RECOMMENDATIONS FOR MONOTUBE POLE STRUCTURES - SEGMENT 2B, DATED SEPTEMBER 15, 2021.
   - SEGMENT 2C - GEOTECHNICAL DESIGN RECOMMENDATIONS FOR MONOTUBE POLE STRUCTURES - SEGMENT 2C, DATED APRIL 2, 2021.

4. ALL BUTT JOINT WELDS SHALL BE FULL PENETRATION GROOVE WELDS WITH BACK-UP PLATES OF ¼" MIN. THICKNESS.

5 THE BACK-UP PLATES FOR ALL FULL PENETRATION WELDS SHALL BE WELDED CONTINUOUSLY TO THE JOINED PIECES. THIS CAN BE DONE BY EITHER A CONTINUOUS FILLET WELD ON THE BACK SIDE OF THE PIECE, OR BY A CONTINUOUS WELD IN THE ROOT OF THE FULL PENETRATION WELD, UNLESS OTHERWISE NOTED.

6. ALL RODS, BOLTS, AND RELATED HARDWARE SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM F2329.

7. ALL STEEL SURFACES SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 111.

8. SIGN PANELS AS SHOWN IN THE CONTRACT PLANS SHALL BE INSTALLED WITH THE SIGN STRUCTURE OR IMMEDIATELY AFTER THE SIGN STRUCTURE IS ERECTED.

λ 9. FABRICATE BEAM TO PROVIDE SMOOTH PARABOLIC CAMBER CURVE. SEE CAMBER DIAGRAM. DO NOT SHIM AT BOLTED SPLICES.

β 9. FABRICATE BEAM TO PROVIDE STRAIGHT CAMBER, SEE CAMBER DIAGRAM. DO NOT SHIM AT BOLTED SPLICES.

10. FABRICATE POST STRAIGHT.

11. MATERIALS SPECIFICATIONS:

ALL STRUCTURAL STEEL EXCEPT AS OTHERWISE NOTED	ASTM A572 GR. 50 OR ASTM A588
ANCHOR RODS	ASTM F1554 GR. 105
HANDHOLE COVER SCREWS	ASTM F593 GR. 1
SPLICE BOLTS	ASTM F3125 GR. 325
SIGN BRACKET RODS	ASTM A307
MOUNTING BEAM BOLTS	ASTM F3125 GR. 325
COVER PLATES	ASTM A36

12. BOTTOM OF BASE PLATE ELEVATIONS AND POST HEIGHTS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD MEASURE ANCHOR ROD LOCATIONS, ELEVATIONS, CLEARANCES AND ALL STEEL STRUCTURE DIMENSIONS, AND SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO COMPLETION OF FABRICATION.

13. POSTS, BASE PLATES, BEAMS AND SPLICE PLATES ARE MAIN LOAD CARRYING TENSILE MEMBERS OR TENSION COMPONENTS OF FLEXURAL MEMBERS AND SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST AS DESCRIBED IN SECTION 6-03.2 FOR AASHTO M 270 MATERIAL. NON-DESTRUCTIVE TEST ACCEPTANCE CRITERIA TO CONFORM TO TENSILE MEMBERS WITH CYCLIC LOAD.

14. SEE OTHER PLANS FOR CONDUIT PENETRATIONS AND HAND HOLES. REFER TO ELECTRICAL PLANS FOR INTERNAL ROUTING OF CONDUCTORS. CONDUIT CONDUCTORS SHALL NOT BE ATTACHED TO THE OUTSIDE OF THE SIGN STRUCTURE.

15. THE MAXIMUM SIGN AREA ON THE STRUCTURE SHALL BE AS NOTED.

α 16. FOR SIGN ATTACHMENT BRACKET DETAILS FOR MONOTUBES SEE STANDARD PLAN G-90.20. PAINT ENTIRE ATTACHMENT BRACKET TO MATCH THE SIGN STRUCTURE EXCEPT FOR MOUNTING BEAM. SIGN, BEAM LENGTHS, AND SIZE SHALL BE DETERMINED FROM THE STANDARD PLANS. SPACING SHALL BE DETERMINED FROM THE CONTRACT PLANS. VARIABLE MESSAGE SIGNS SHALL HAVE MOUNTING BEAMS @ 3'-0" MAXIMUM. FOR MAINTENANCE PLATFORM ATTACHMENT BRACKET DETAILS FOR MONOTUBES SEE STANDARD PLAN G-95.20. MAINTENANCE WALKWAY DETAILS SHALL BE DETERMINED FROM THE CONTRACT PLANS OR THE STANDARD PLANS

π 16. FOR SIGN AND LIGHT ATTACHMENT BRACKET DETAILS FOR MONOTUBES SEE STANDARD PLAN G-90.20. PAINT ENTIRE ATTACHMENT BRACKET TO MATCH THE SIGN STRUCTURE EXCEPT FOR MOUNTING BEAM. SIGN, BEAM LENGTHS, AND SIZE SHALL BE DETERMINED FROM THE STANDARD PLANS. SPACING SHALL BE DETERMINED FROM THE CONTRACT PLANS.

β 17. THE TOTAL BEAM LENGTH "S" SHALL NOT EXCEED 35'-0".

18. ALL WELDING SHALL BE DONE TO MINIMIZE DISTORTION. PERMISSIBLE MONOTUBE DIMENSION VARIATIONS FOR OUTSIDE DIMENSIONS, WALL THICKNESS, LENGTH, STRAIGHTNESS, (PARABOLICALLY CAMBERED SIGN BRIDGE BEAMS EXCLUDED) SQUARENESS OF SIDES AND TWIST SHALL BE IN ACCORDANCE WITH SECTION 11 OF ASTM A500.

19. RFP SECTIONS 2.15.4.8 COLOR AESTHETICS, 2.15.4.6 SIGN STRUCTURES AND TOLL GANTRIES AESTHETICS, AND THE I-405 URBAN DESIGN CRITERIA REQUIRE THAT EXPOSED SURFACES OF METAL COMPONENTS SHALL BE POWDER COATED OR PAINTED AFTER FABRICATION IN ACCORDANCE WITH STANDARD SPECIFICATION 6-07.3(11) PAINTING OR POWDER COATING OF GALVANIZED SURFACES. UNLESS OTHERWISE NOTED ON THE STRUCTURE PLANS, COLOR SHALL BE WSDOT STANDARD COLOR CASCADE GREEN. MAINTENANCE PLATFORMS AND ASSOCIATED HANDRAILINGS SHALL NOT BE PAINTED.

20. AS AN OPTION FOR SIGN BRIDGES, CAP OF ONE FOUNDATION MAY BE PLACED WHILE COMPLETED SIGN BRIDGE IS TEMPORARILY SUPPORTED IN PLACE.

21. APPROACH TO FIELD VERIFICATION OF SOILS: THE GEOTECHNICAL SPECIAL INSPECTOR (GSI) SHALL OBSERVE SHAFT CONSTRUCTION AND SUMMARIZE RESULTS IN A WRITTEN FIELD REPORT. THE GEOTECHNICAL ENGINEER OF RECORD SHALL BE CONTACTED IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION ARE SIGNIFICANTLY DIFFERENT THAN ASSUMED FOR DESIGN. SUCH CONDITIONS MAY INCLUDE, BUT ARE NOT LIMITED TO SOFT OR LOOSE SOIL, GROUNDWATER, FILL RUBBLE AND/OR OBSTRUCTIONS. THE CONTRACTOR IS ADVISED THAT LENGTHENING OF SHAFT REINFORCEMENT WILL BE NEEDED IF ADDITIONAL SHAFT EMBEDMENT IS REQUIRED IN SUCH CONDITIONS. IF AN OBSTRUCTION IS ENCOUNTERED, THE STRUCTURAL ENGINEER WILL BE CONTACTED BY THE GEOTECHNICAL ENGINEER TO DETERMINE IF IT IS FEASIBLE TO MOVE THE FOUNDATION SEVERAL FEET TO ATTEMPT TO AVOID THE CONFLICT.

LEGEND

B/15 — IDENTIFIES SECTION OR VIEW; TAKEN OR SHOWN ON BRIDGE SHEET 15

1/— IDENTIFIES DETAILS; TAKEN OR SHOWN ON THE SAME SHEET

99 — FLAGNOTE: IDENTIFIES NOTE REFERENCE ON THE SAME SHEET

π CANTILEVER ONLY
α BALANCE "T" & SIGN BRIDGES ONLY
β BALANCE "T" & CANTILEVER ONLY
λ SIGN BRIDGES ONLY

SR ____ FILE NO. ____ SHEET ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/6/2021				CONTRACT NO. C9242				
Time:	3:25:46 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

GENERAL NOTES

PLAN REF. NO. SSD-A01

SHEET OF SHEETS

BRIDGE MOUNTED SIGN BRACKET GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, DATED 2018, AMENDMENTS, AND GENERAL SPECIAL PROVISIONS.

2. SIGN SUPPORT COMPONENTS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, DATED 2009 AND INTERIMS, USING BASIC WIND SPEED OF 115 MPH AND 50 YEARS OF DESIGN LIFE.

3. MATERIAL SPECIFICATIONS:

PLATES AND BARS	ASTM A 36
PIPES	ASTM A 53, GRADE B, OR ASTM A 500, GRADE B
BRACING ROD	ASTM A 307
BOLTS, NUTS & WASHERS (UNLESS NOTED OTHERWISE)	STD SPEC. 9-06.5(1)
U-BOLTS, LOCKNUTS & WASHERS (UNLESS NOTED OTHERWISE)	STAINLESS STEEL CONFORMING TO STD SPEC. 9-28.11
RESIN BONDED ANCHORS (ALL THREAD)	ALL THREADED ROD: ASTM F 593, TYPE 304 NUT: ASTM F 594, TYPE 304 WASHERS: ASTM A 240, TYPE 304
EPOXY BONDING AGENT	STD SPEC. 9-26.1 (TYPE IV)

4. ALL NON-STAINLESS STEEL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232. RFP SECTIONS 2.15.4.8 COLOR AESTHETICS, 2.15.4.6 SIGN STRUCTURES AND TOLL GANTRIES AESTHETICS, AND THE I-405 URBAN DESIGN CRITERIA REQUIRE THAT EXPOSED SURFACES OF METAL COMPONENTS SHALL BE POWDER COATED OR PAINTED AFTER FABRICATION IN ACCORDANCE WITH STANDARD SPECIFICATION 6-07.3(11) PAINTING OR POWDER COATING OF GALVANIZED SURFACES. UNLESS OTHERWISE NOTED ON THE STRUCTURE PLANS, COLOR SHALL BE WSDOT STANDARD COLOR CASCADE GREEN.

5 SIZE OF FILLET WELDS SHALL BE ¼" MINIMUM EXCEPT WHERE NOTED OTHERWISE.

6. FOR W4X13 DETAILS SEE STANDARD PLAN G-90.10 AND G-90.40. WHERE W4X13 SPACING CONFLICTS WITH THE VERTICAL AND HORIZONTAL PIPE CONNECTION, THE SPACING MAY BE MODIFIED SO THE MAXIMUM SPACING DOES NOT EXCEED 6 FEET AND THE EDGE DISTANCE DOES NOT EXCEED 3 FEET.

7. THE DIMENSIONS SHOWN IN THE PLANS ARE BASED ON WSDOT RECORDS OR CONTRACT PLANS. THESE
DIMENSIONS SHALL BE FIELD MEASURED AND VERIFIED BY THE CONTRACTOR.

8. RESIN BONDED ANCHOR HOLES SHALL NOT BE CORE DRILLED.

9. WIND AND FATIGUE LOAD PARAMETERS:
   - BASIC WIND SPEED. U=115MPH
   - GUST FACTOR. G=1.14
   - 50 YEARS DESIGN LIFE.
   - FATIGUE CATEGORY 1

LEGEND

B / 15 — IDENTIFIES SECTION OR VIEW; TAKEN OR SHOWN ON BRIDGE SHEET 15

1 / — IDENTIFIES DETAILS; TAKEN OR SHOWN ON THE SAME SHEET

99 — FLAGNOTE: IDENTIFIES NOTE REFERENCE ON THE SAME SHEET

SR ____ FILE NO. ____ SHEET ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	12/6/2021				CONTRACT NO. C9242				
Time:	3:38:59 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

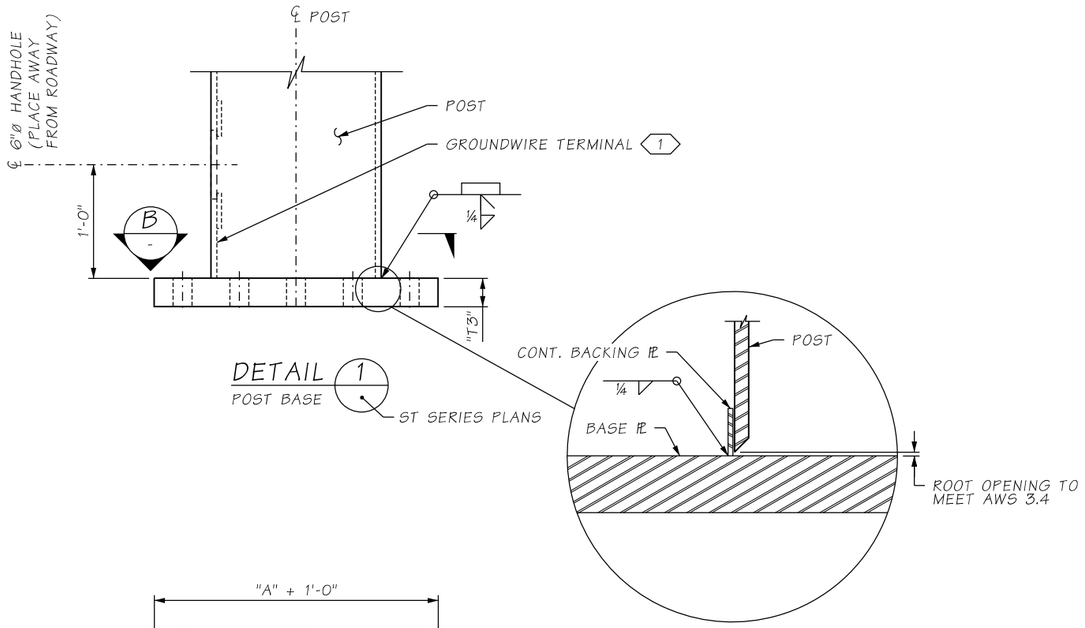
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

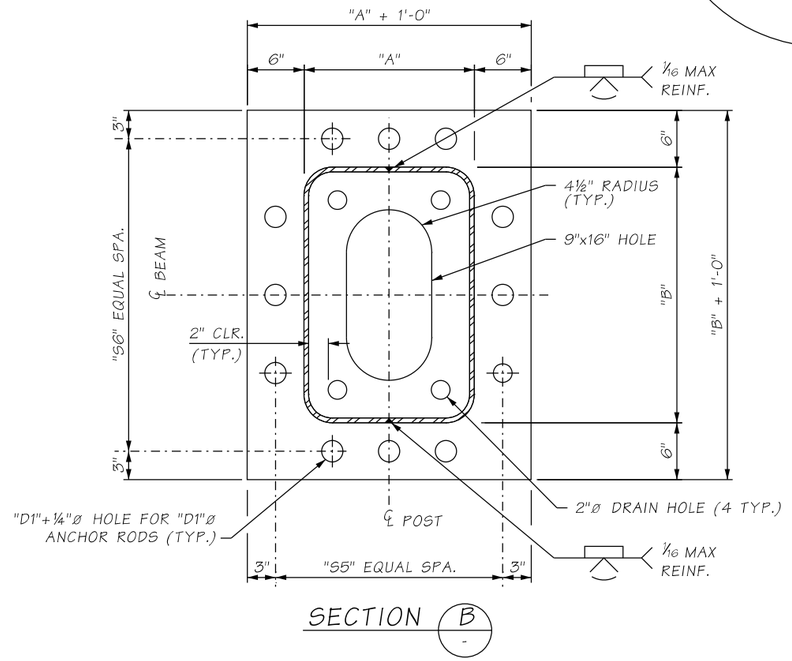
GENERAL NOTES

PLAN REF. NO. SSD-A02

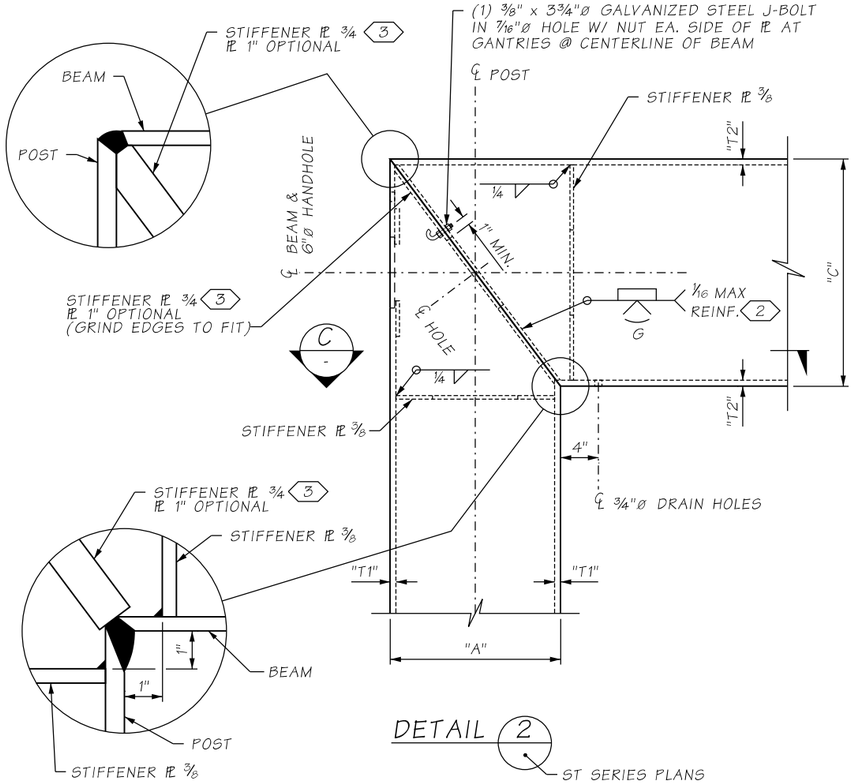
SHEET ____ OF ____ SHEETS



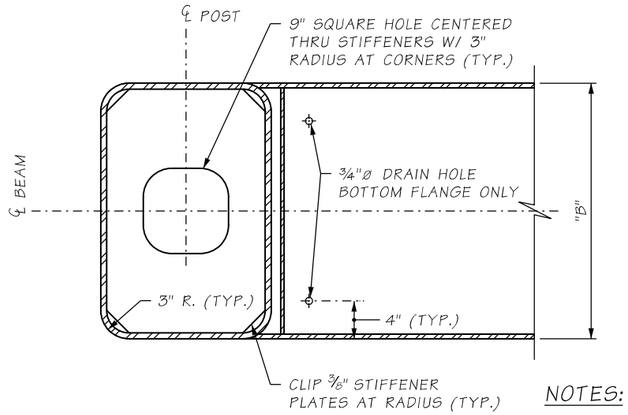
DETAIL 1
POST BASE
ST SERIES PLANS



SECTION B
-



DETAIL 2
ST SERIES PLANS



SECTION C
DIAGONAL STIFFENER NOT SHOWN
-

NOTES:

1. SEE STD. PLAN J-75.40 SHEET 1 OF 2 "DETAIL C" FOR GROUND CONNECTION.
2. MT & VT @ ROOT PASS 100% & @ COVER PASS 100%
3. PLACE VENT HOLES IN CORNERS OF STIFFENER PL ¾ AS REQUIRED FOR GALVANIZING PROCESS.

SR ___ SHEET ___
FILE NO. ___

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:20:13 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

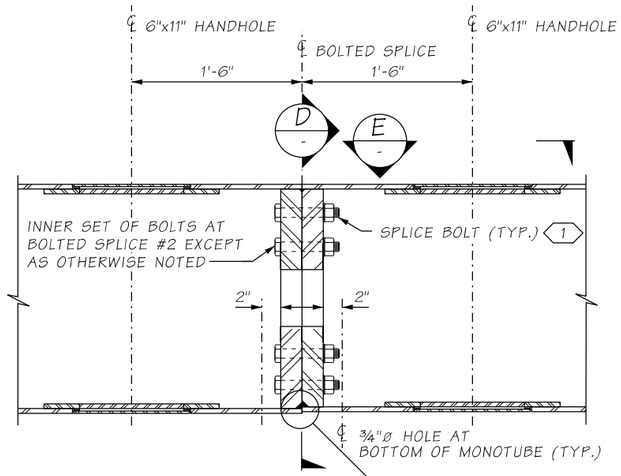
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 1

PLAN REF. NO. SSD-A03

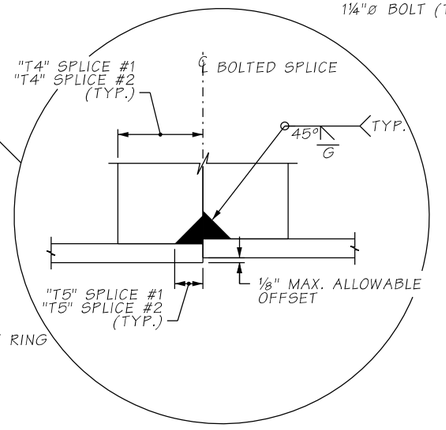
SHEET ___ OF ___ SHEETS

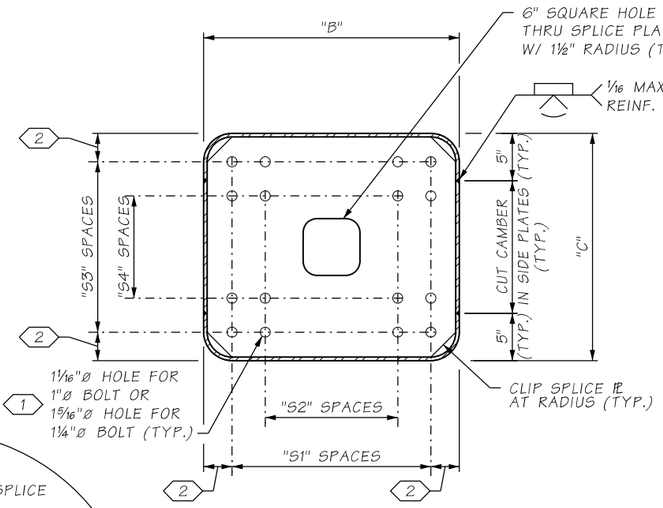


DETAIL 3

SECTION THROUGH BEAM AT BOLTED SPLICE #2. BOLTED SPLICE #1 SIMILAR.

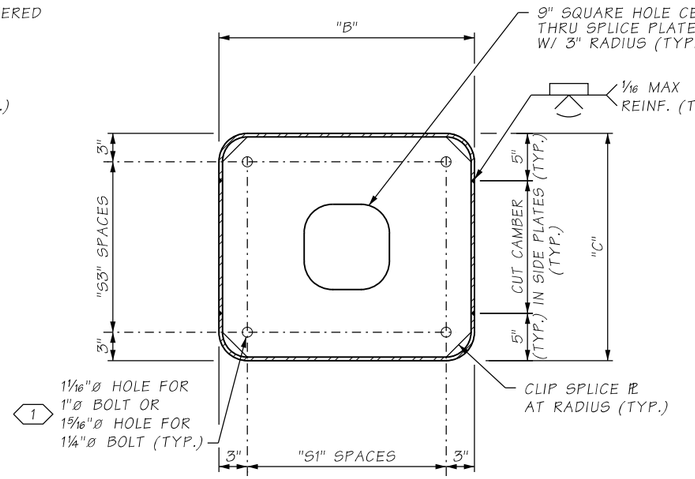
ST SERIES PLANS





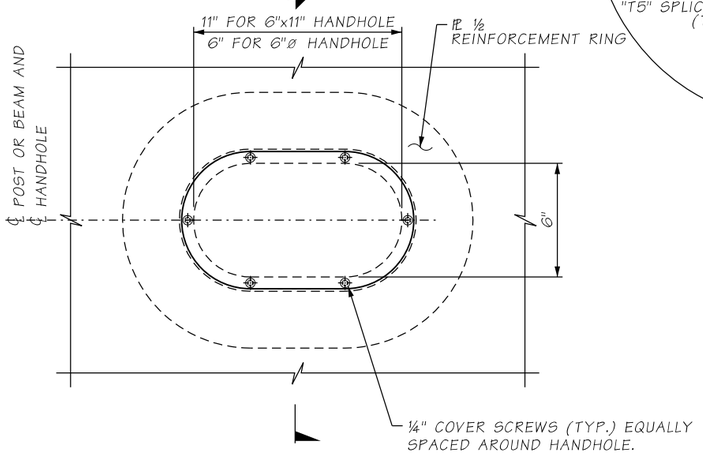
SECTION D

BOLTED SPLICE #2 DETAIL



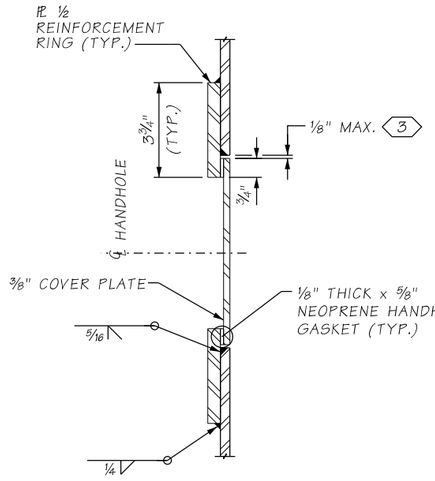
SECTION D

BOLTED SPLICE #1 DETAIL



VIEW E

6" x 11" HANDHOLE SHOWN. 6"ø HANDHOLE SIMILAR EXCEPT AS NOTED.



SECTION F

NOTES:

1. 1"ø SPLICE BOLT (TYP. UP TO 120'-0" SPANS) 1¼"ø SPLICE BOLT (TYP. 120' - 180' SPANS)
2. 3" FOR 1"ø SPLICE BOLT OR 2⅞" FOR 1¼"ø SPLICE BOLT
3. SEAL WITH APPROVED SEALANT AT INSTALLATION OF HANDHOLES ON TOP OF BEAM ONLY.

SR ___ FILE NO. ___ SHEET

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:21:43 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

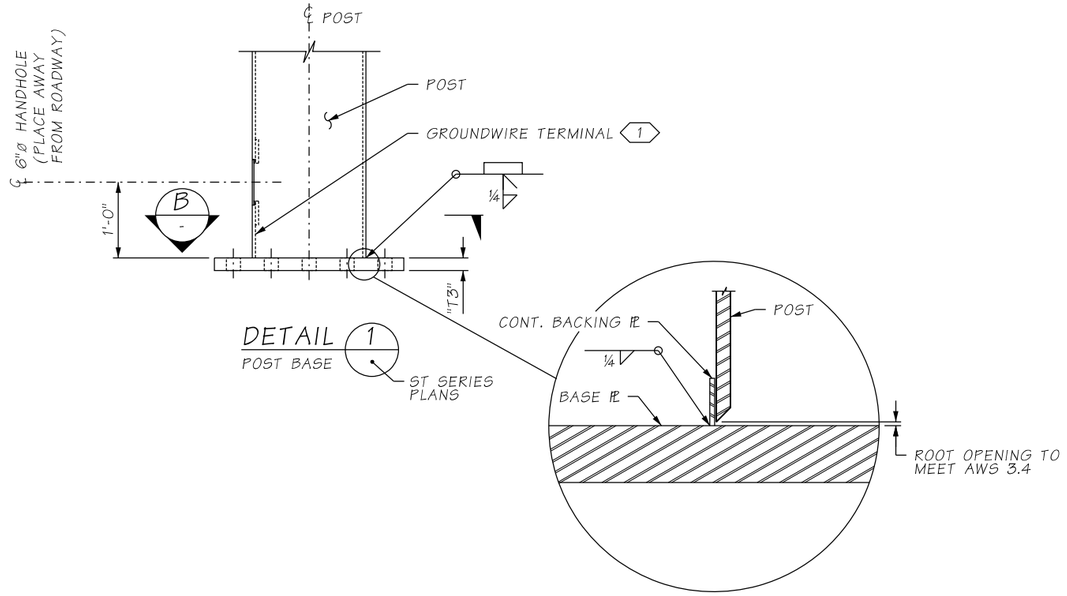
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

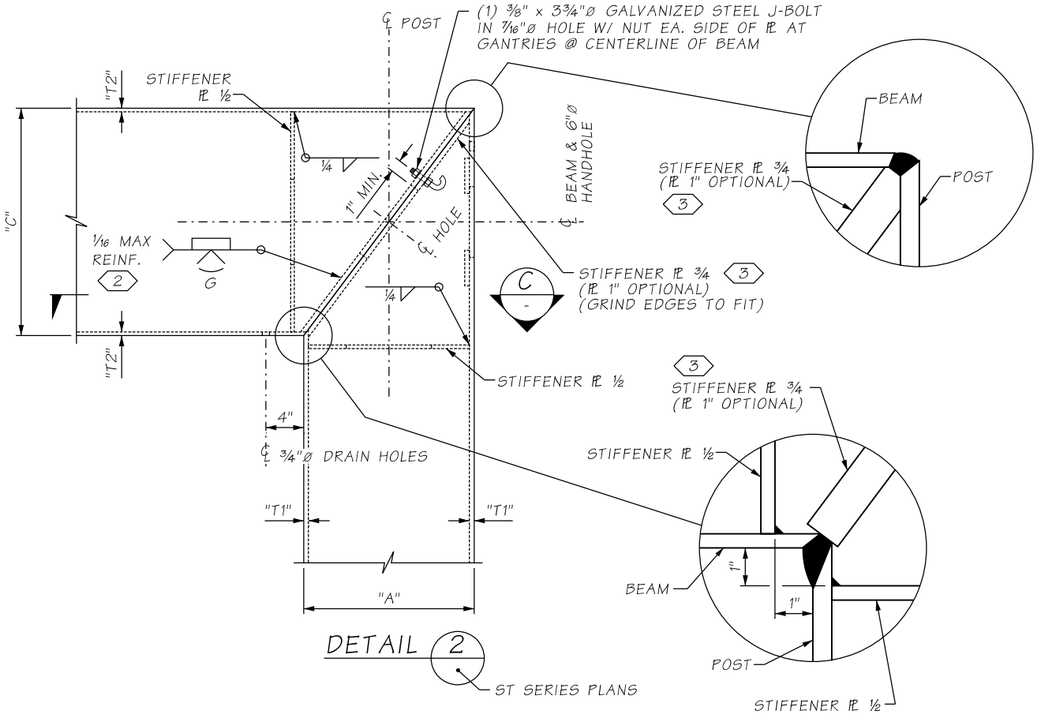
SIGN STRUCTURE DETAILS

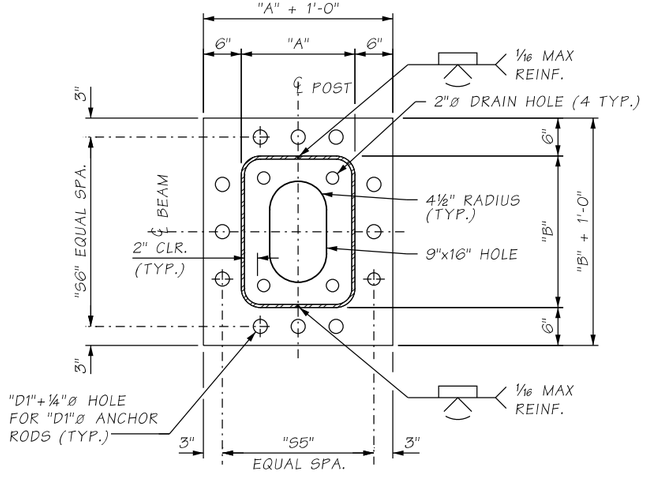
MONOTUBE SIGN BRIDGE STRUCTURAL DETAILS 2

PLAN REF. NO. SSD-A04

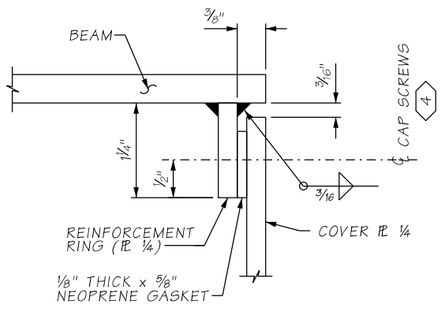
SHEET ___ OF ___ SHEETS



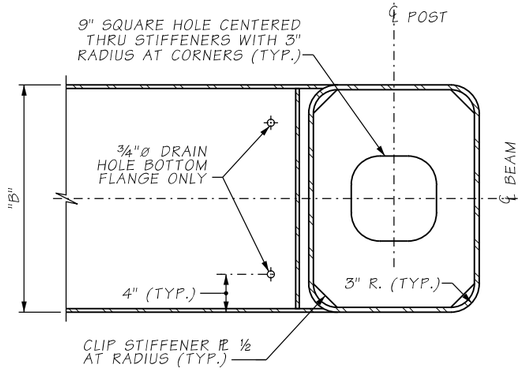




SECTION B -



DETAIL 3
FOR CANTILEVER STRUCTURES ONLY.
ST SERIES PLANS



SECTION C
DIAGONAL STIFFENER NOT SHOWN

NOTES:

1. SEE STD. PLAN J-75.40 SHEET 1 OF 2 "DETAIL C" FOR GROUND CONNECTION.
2. MT & VT @ ROOT PASS 100% & @ COVER PASS 100%.
3. PLACE VENT HOLES IN CORNERS OF STIFFENER ℙ 3/4 AS REQUIRED FOR GALVANIZING PROCESS.
4. 1/4" CAP SCREWS ASTM F-593 ~ TAP REINFORCEMENT RING WITH 8 TOTAL EQUALLY SPACED AROUND COVER ℙ.

SR ___ SHEET ___ FILE NO. ___

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:25:21 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation
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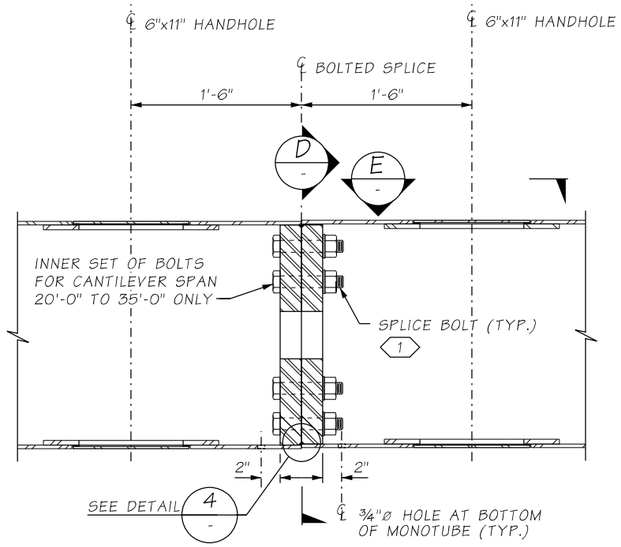
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS

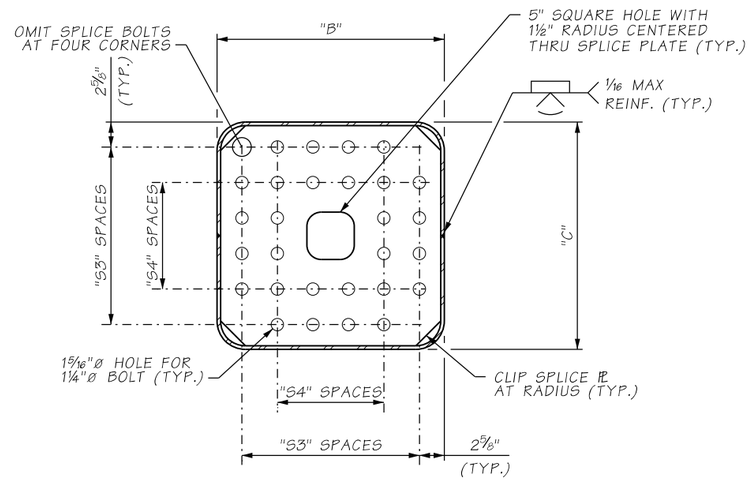
MONOTUBE CANTILIEVER STRUCTURAL DETAILS 1

PLAN REF. NO. SSD-A06

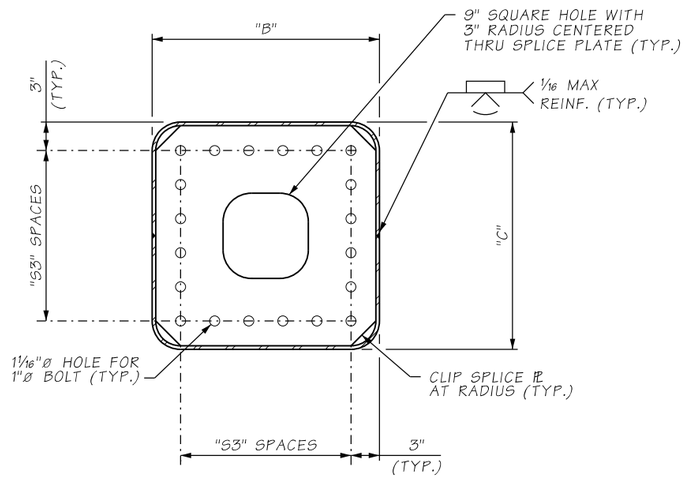
SHEET ___ OF ___ SHEETS



DETAIL 2
SECTION THRU BEAM
ST SERIES PLANS



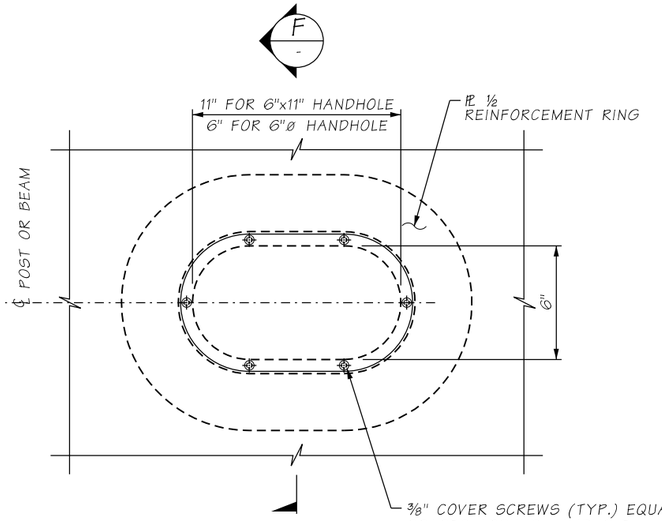
SECTION D
TYPICAL FOR
20'-0" TO 35'-0"
-



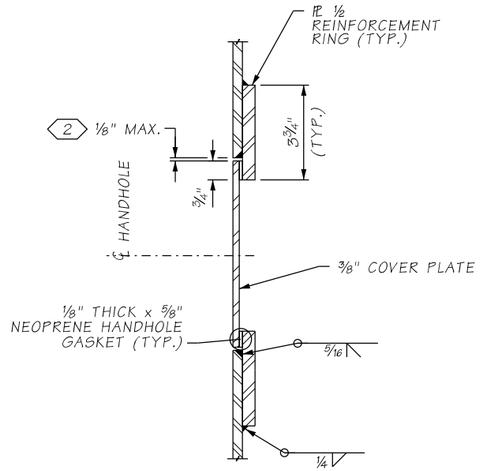
SECTION D
TYPICAL FOR
LESS THAN 20'-0"
-

NOTES:

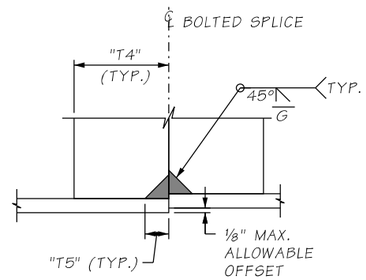
1. 20 TOTAL (OUTER SET) - 1"ø SPLICE BOLT FOR CANTILEVER SPAN LESS THAN 20'-0" 28 TOTAL (OUTER AND INNER SET) - 1¼"ø SPLICE BOLT FOR CANTILEVER SPANS 20'-0" TO 35'-0"
2. SEAL WITH APPROVED SEALANT AT INSTALLATION OF HANDHOLES ON TOP OF BEAM ONLY.



VIEW E
6" x 11" HANDHOLE SHOWN.
6"ø HANDHOLE SIMILAR
EXCEPT AS NOTED.
-



SECTION F
-



DETAIL 4
-

SR FILE NO. SHEET

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A07.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	11/30/2021				CONTRACT NO. C9242				
Time:	10:30:15 AM	DESCRIPTION	DATE	NO					

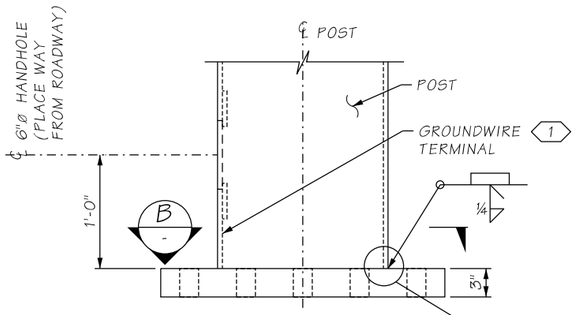
SANTOSH J KURUVILLA STATE OF WASHINGTON 27430 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER
E.O.R. 1 STAMP BOX
DATE

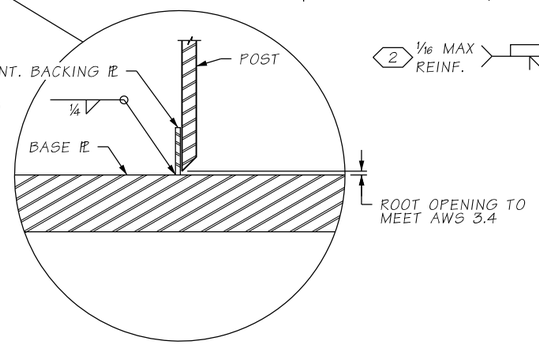
FINAL DESIGN
NOT FOR CONSTRUCTION
DATE
E.O.R. 2 STAMP BOX

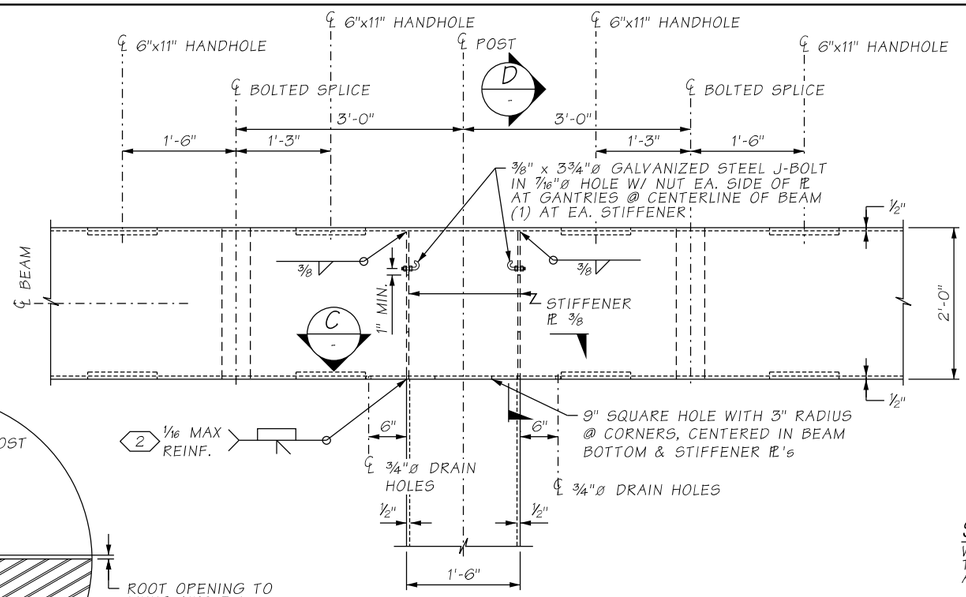
Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS
MONOTUBE CANTILIEVER STRUCTURAL DETAILS 2

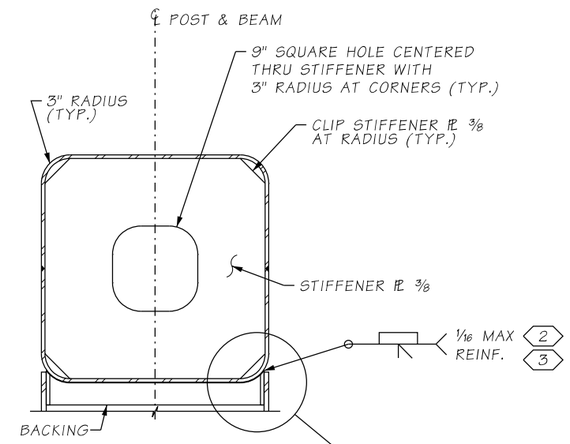
PLAN REF. NO. SSD-A07
SHEET OF SHEETS



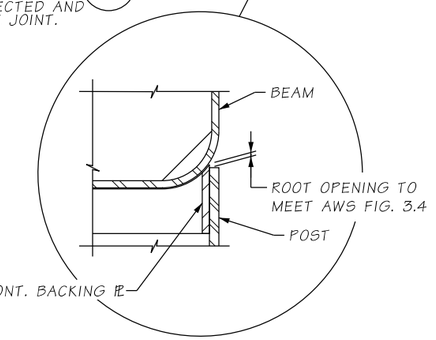


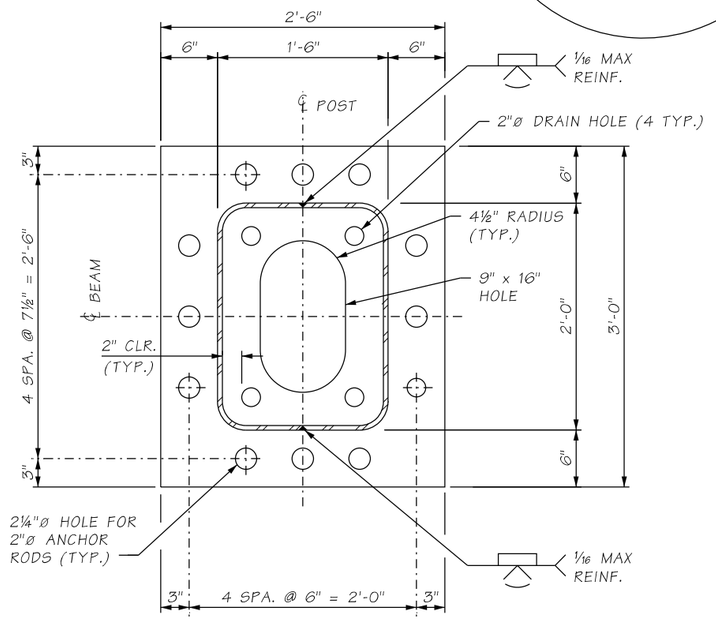


DETAIL 2
ST SERIES PLANS

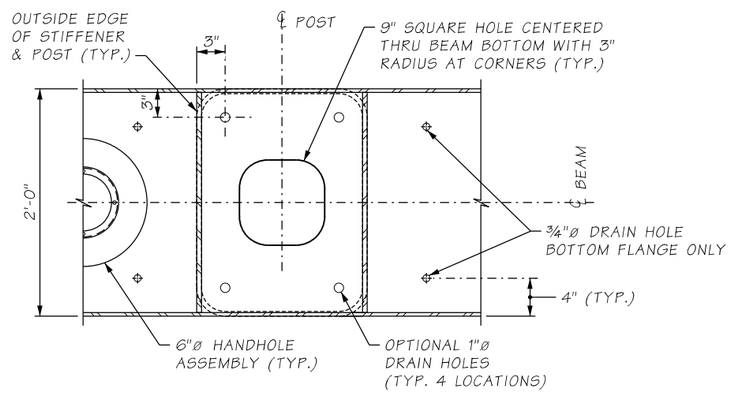


SECTION D
-
WELDING SHALL NOT BEGIN UNTIL THE ENGINEER HAS INSPECTED AND APPROVED FIT-UP OF THE JOINT.

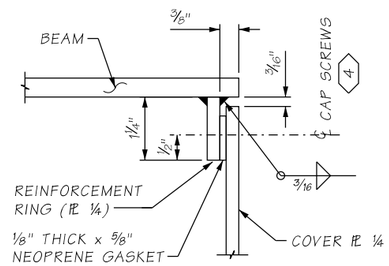




SECTION B
-



SECTION C
-



DETAIL 3
ST SERIES PLANS

NOTES:

1. SEE STD. PLAN J-75.40 SHEET 1 OF 2 "DETAIL C" FOR GROUND CONNECTION.
2. MT & VT @ ROOT PASS 100% AND @ COVER PASS 100%
3. WELDING SHALL NOT BEGIN UNTIL THE ENGINEER HAS INSPECTED AND APPROVED FIT-UP OF THE JOINT.
4. ¼" CAP SCREWS ASTM F-593. TAP REINFORCEMENT RING WITH 8 TOTAL EQUALLY SPACED AROUND COVER ℄

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A08.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:32:09 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

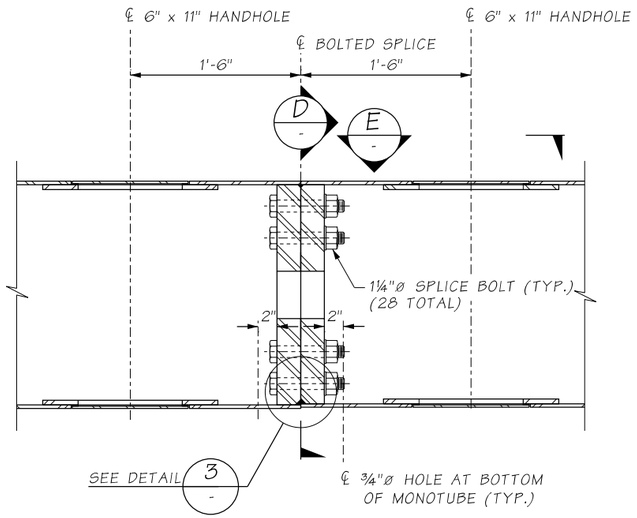
SIGN STRUCTURE DETAILS

MONOTUBE BALANCED CANTILIEVER STRUCTURAL DETAILS 1

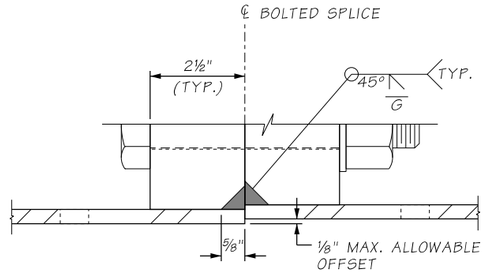
PLAN REF. NO. SSD-A08

SHEET OF SHEETS

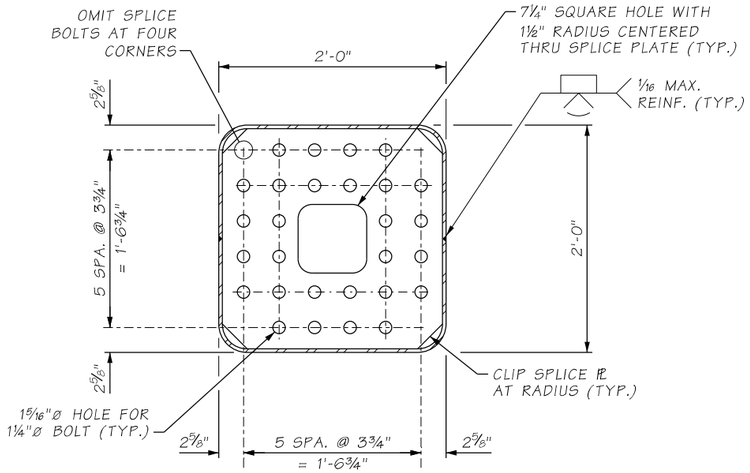
SR ____ FILE NO. ____ SHEET ____



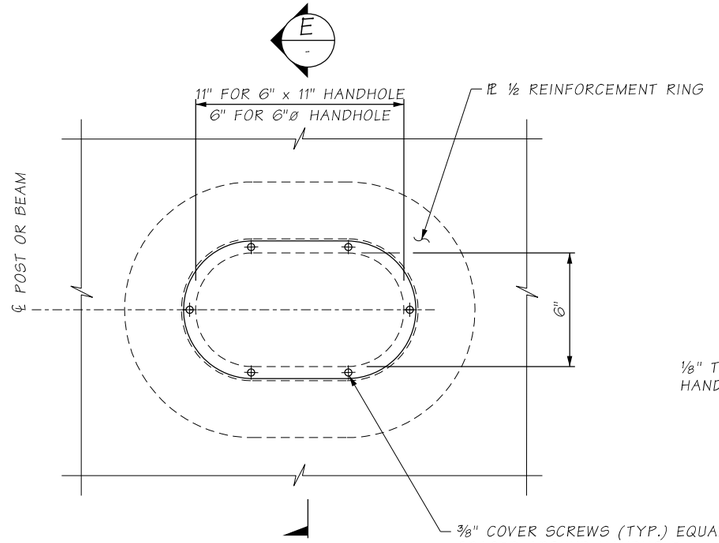
DETAIL 2
SECTION THRU BEAM
ST SERIES PLANS



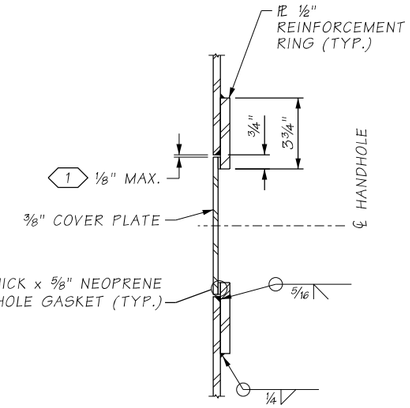
DETAIL 3



SECTION D



VIEW E
6" x 11" HANDHOLE SHOWN.
6"ø HANDHOLE SIMILAR,
EXCEPT AS NOTED.



SECTION E

NOTES:

1. SEAL WITH APPROVED SEALANT AT INSTALLATION OF HANDHOLES ON TOP OF BEAM ONLY.

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A09.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:33:43 AM	DESCRIPTION	DATE	NO					

SR FILE NO. SHEET

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE
E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE
E.O.R. 2 STAMP BOX

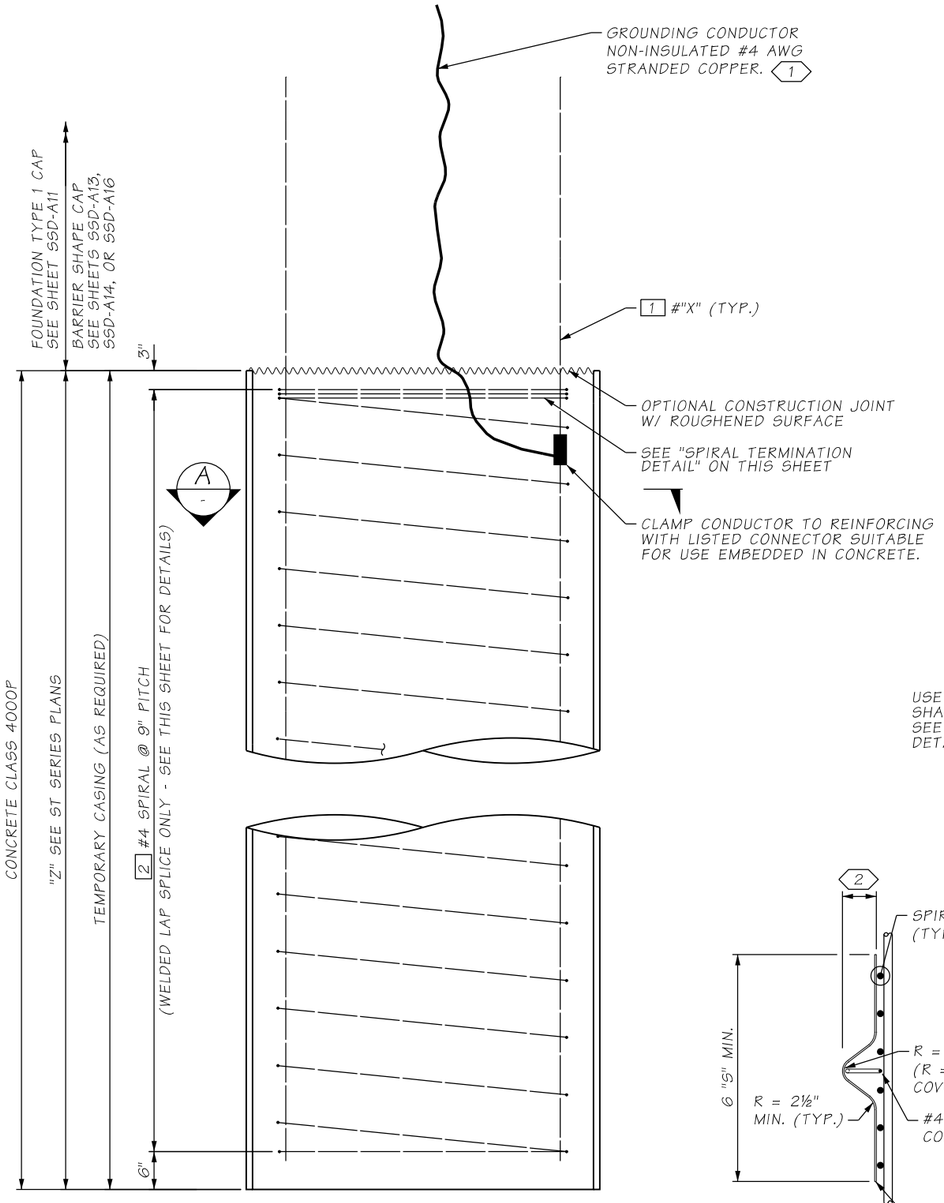
Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS

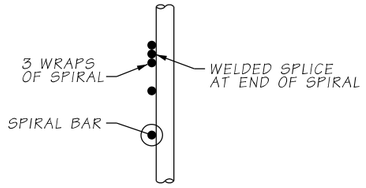
MONOTUBE BALANCED CANTILIEVER STRUCTURAL DETAILS 2

PLAN REF. NO. SSD-A09

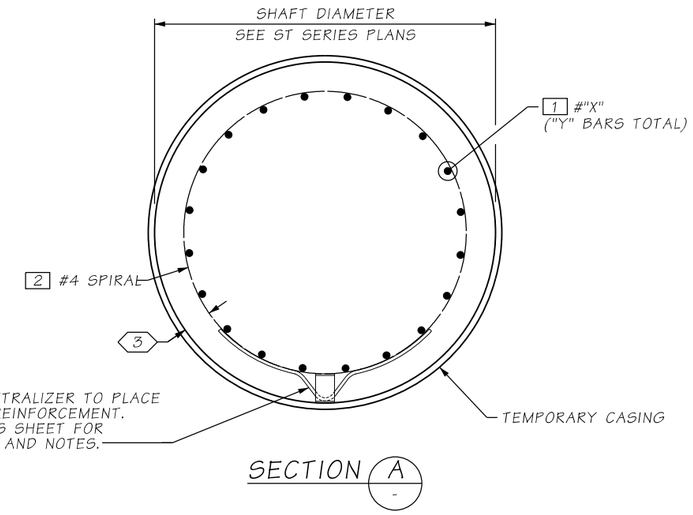
SHEET OF SHEETS



ELEVATION

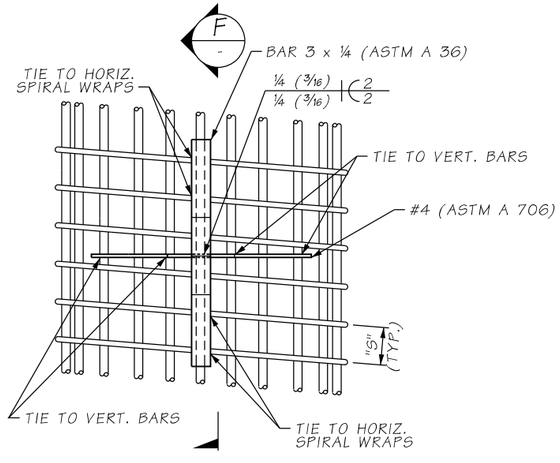


SPIRAL TERMINATION DETAIL

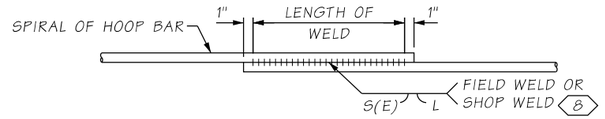


SECTION A

VIEW F



CENTRALIZER DETAIL
4 5 6 7



WELDED LAP SPLICE DETAIL

DEFORMED BAR	WELD DIMENSIONS (IN.)		
	S	E	LENGTH (L)
#4	¼	⅛	4

NOTES:

1. PROVIDE 3'-0" MIN. SLACK. ROUTE CONDUCTOR TO GROUND WIRE TERMINAL SHOWN IN DETAIL 1 ON SHEETS SSD-A03, SSD-A06, OR SSD-A08.
2. MINIMUM CONCRETE COVER MINUS ½".
3. SEE STD. SPEC. 6-19.3(5)c. FOR MINIMUM CONCRETE COVER.
4. SEE STD. SPEC. 6-19.3(5)b FOR SPACING REQUIREMENTS.
5. CENTRALIZERS SHALL BE EPOXY COATED OR PAINTED WITH PAINT CONFORMING TO STANDARD SPECIFICATION 9-08.1(2)c OR 9-08.1(2)f AFTER FABRICATION.
6. EACH LEG SHALL BE TIED TO TWO (2) VERTICAL BAR AND TWO (2) SPIRAL WRAPS OR TWO (2) HOOPS.
7. CAGECASTER® REBAR CAGE SPACERS BY FOUNDATION TECHNOLOGIES MAY BE USED IN LIEU OF DETAIL SHOWN. SPACING REQUIREMENTS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. EACH LEG SHALL BE TIED TO A MINIMUM OF TWO (2) SIPRAL WRAPS OR HOOPS.
8. WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. 6-02.3(24)E FOR WELD DIMENSIONS, SEE SHAFT / HOOP OPTIONS TABLE THIS SHEET.

SR FILE NO. SHEET

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A10.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:38:27 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

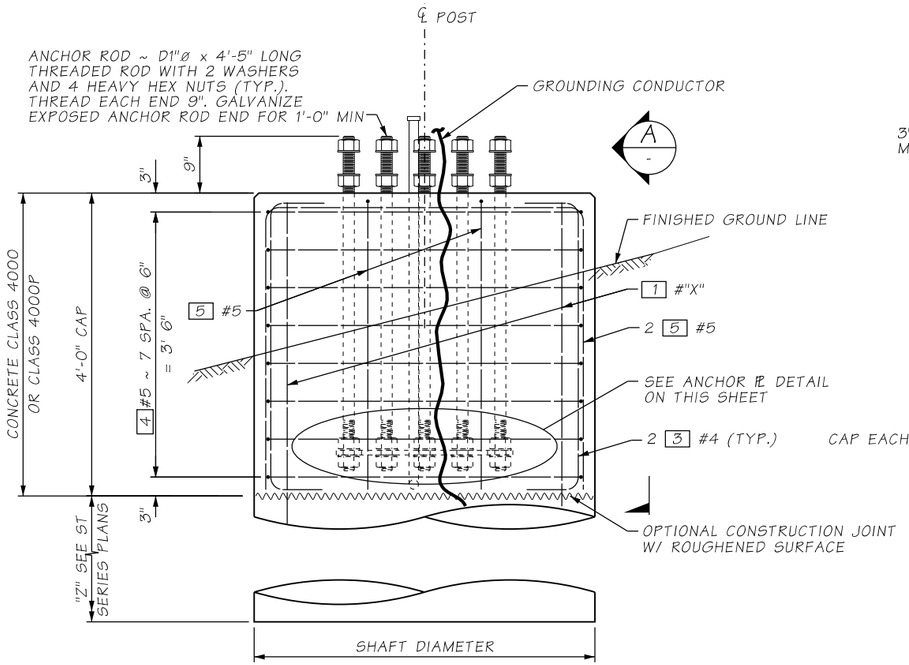
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

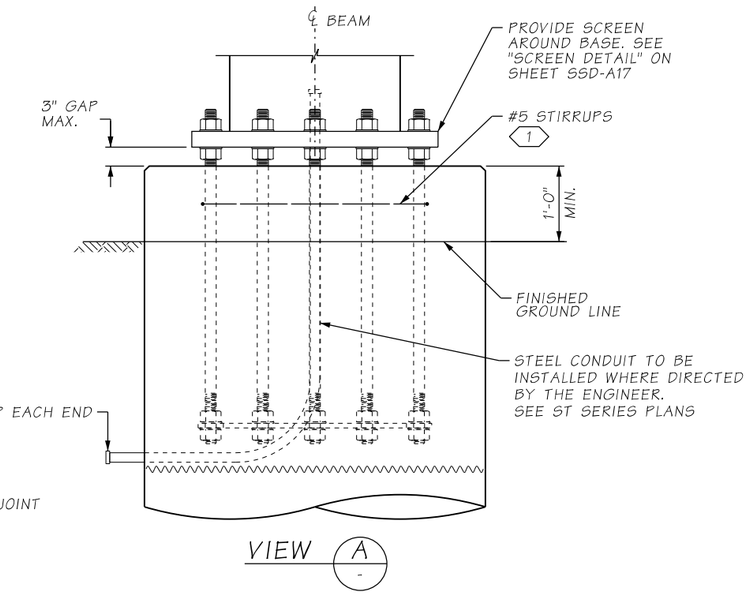
MONOTUBE SIGN STRUCTURES
FOUNDATION TYPE 1 - SHAFT DETAILS

PLAN REF. NO. SSD-A10

SHEET OF SHEETS



ELEVATION



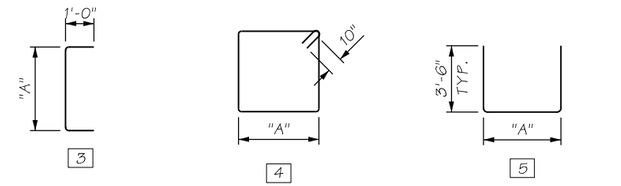
VIEW A

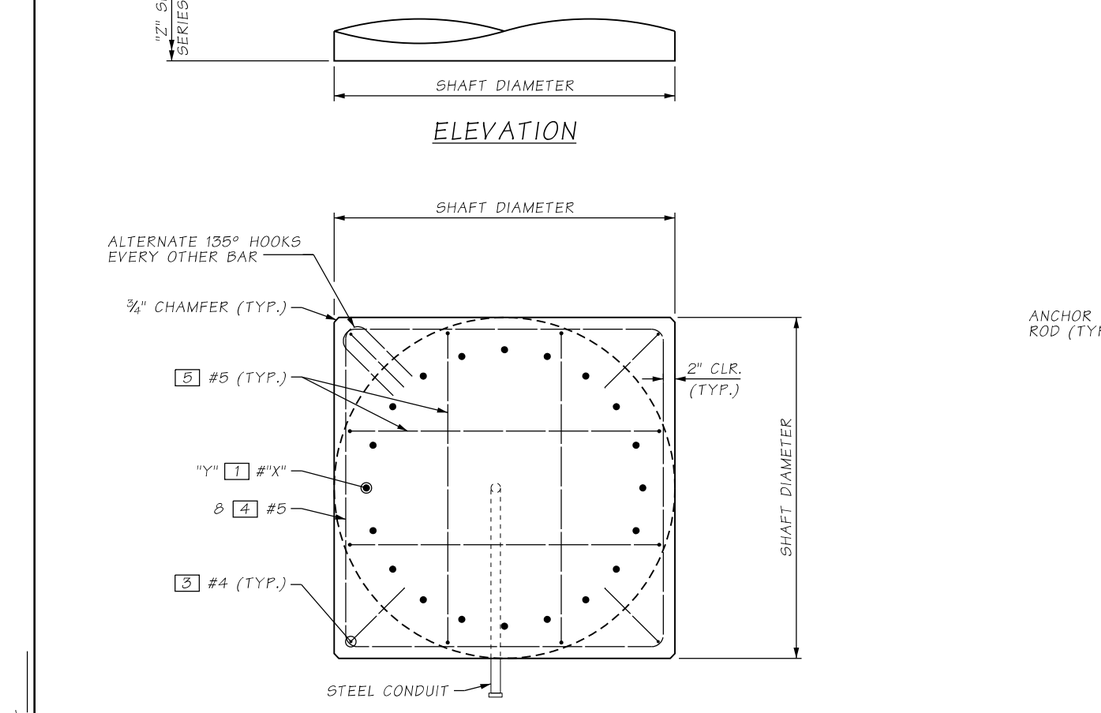
BENDING DIAGRAM

MARK	LOCATION	SIZE	NO. REQ'D.	LENGTH	
3	CAP VERTICAL	4	4	5'-6½"	
4	CAP HOOPS	5	8	"A"	
5	CAP TOP	5	4	"A"	

NOTE: CONCRETE COVER SHALL BE 1½" UNLESS SHOWN OTHERWISE.

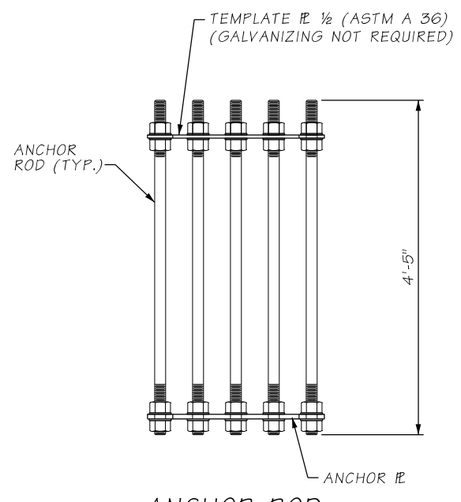
"A" ~ DETERMINE FROM PLANS





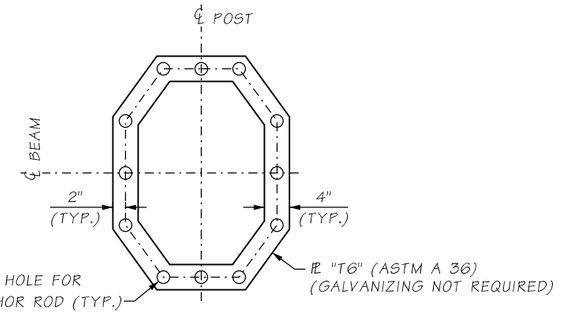
PLAN

ANCHOR RODS NOT SHOWN



ANCHOR ROD ARRAY

SHIP THE ANCHOR ROD ARRAY ASSEMBLY AS A COMPLETE UNIT



ANCHOR ℙ DETAIL

FOR ANCHOR ROD PATTERN, SEE SECTION B

SSD-A03, SSD-A06. OR SSD-A08

NOTES:

1. APPLY ONLY FOR TYPY 1 FOUNDATION ON SHEET ST-063. SEE STIRRUP LAYOUT DETAIL ON SHEET SSD-A05.

SR ___ FILE NO. ___ SHEET ___

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A11.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:43:42 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

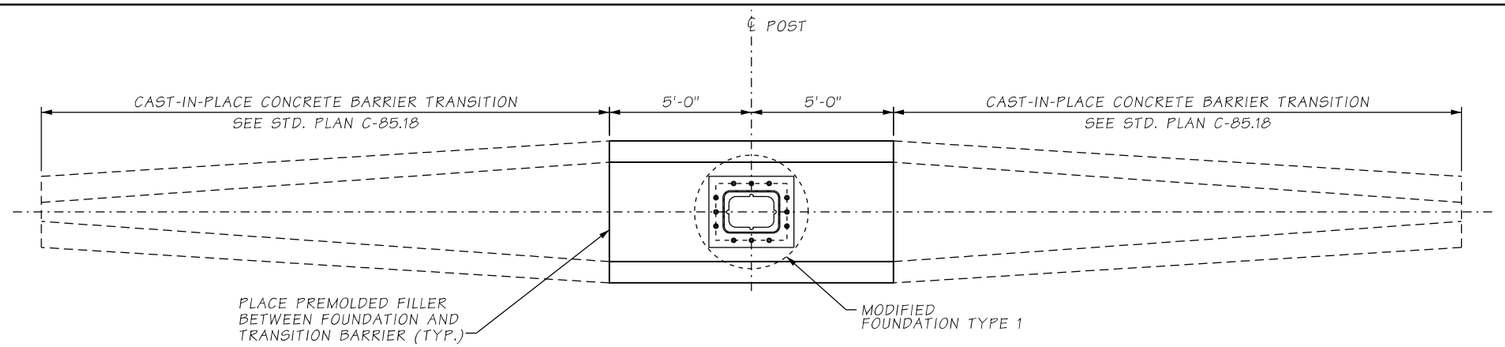
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

MONOTUBE SIGN STRUCTURES
FOUNDATION TYPE 1 - CAP DETAILS

PLAN REF. NO. SSD-A11

SHEET ___ OF ___ SHEETS



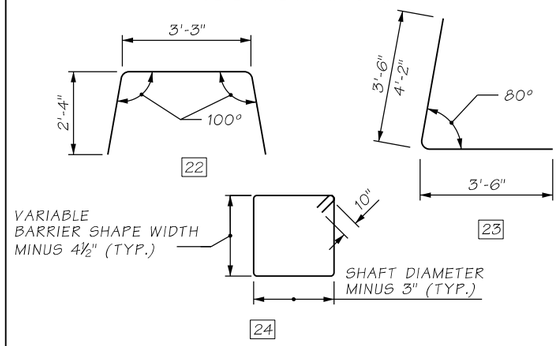
PLAN
BARRIER TRANSITION

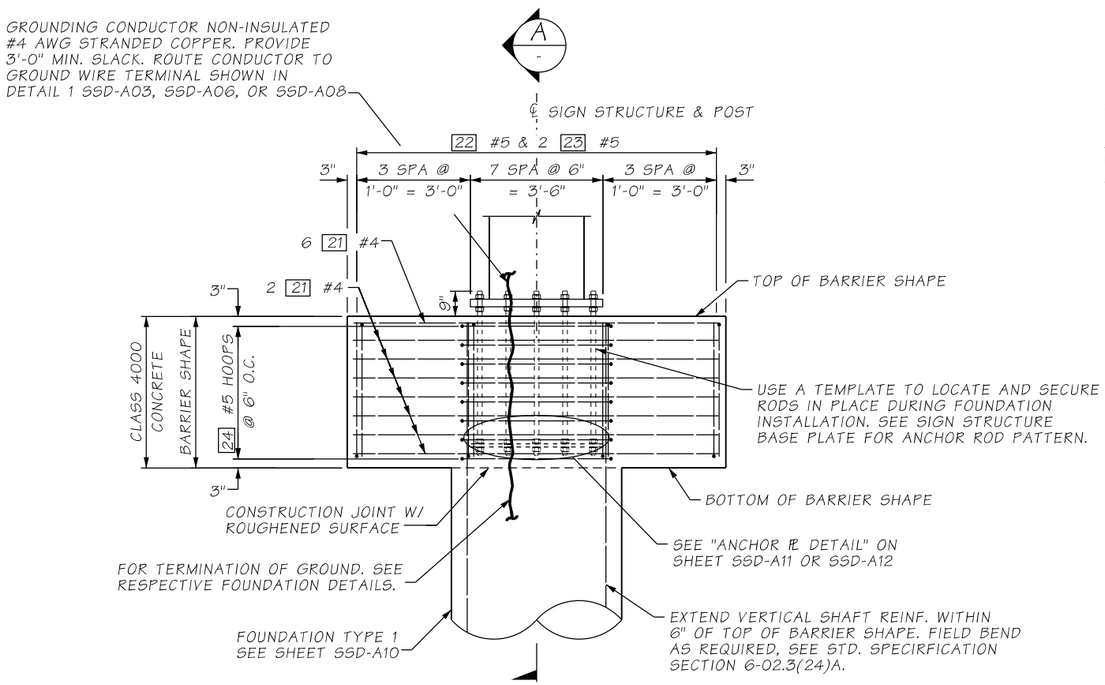
ANCHOR RODS NOT SHOWN.

BENDING DIAGRAM

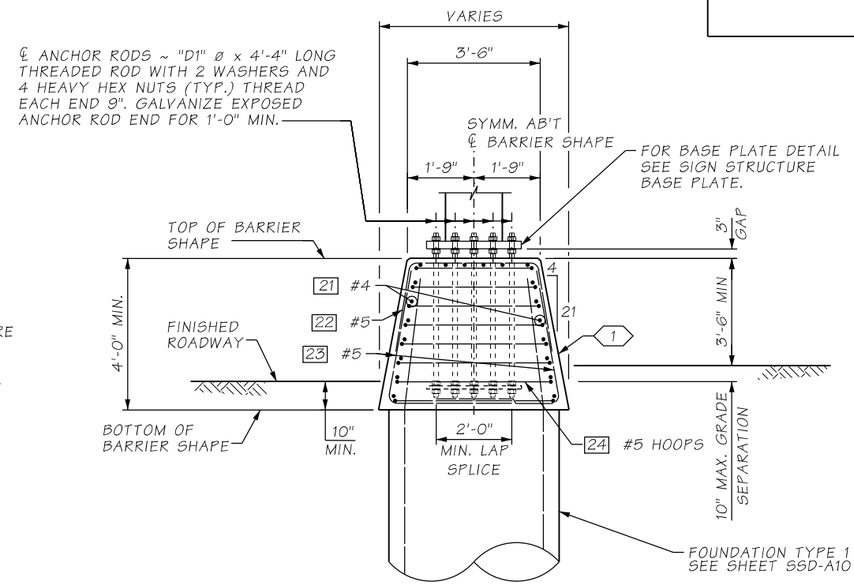
MARK	LOCATION	SIZE	NO. REQ'D	LENGTH	
21	BARRIER SHAPE HORIZONTAL	4	20	9'-9"	STR.
22	BARRIER SHAPE VERTICAL	5	14	7'-8"	
23	BARRIER SHAPE VERTICAL	5	28	6'-4"	
24	BARRIER SHAPE HOOP	5	"A"	"A"	

NOTE: CONCRETE COVER SHALL BE 1½" UNLESS SHOWN OTHERWISE.
"A" ~ DETERMINE FROM PLANS





ELEVATION



SECTION A

NOTES:

1. ALTERNATIVE BARRIER FACE DESIGN IS TO BE USED ONLY WHEN OUTSIDE BARRIER FACE IS VISIBLE TO THE PUBLIC SEE DETAIL ON SHEET SSD-A16.

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A13.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	10:55:24 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

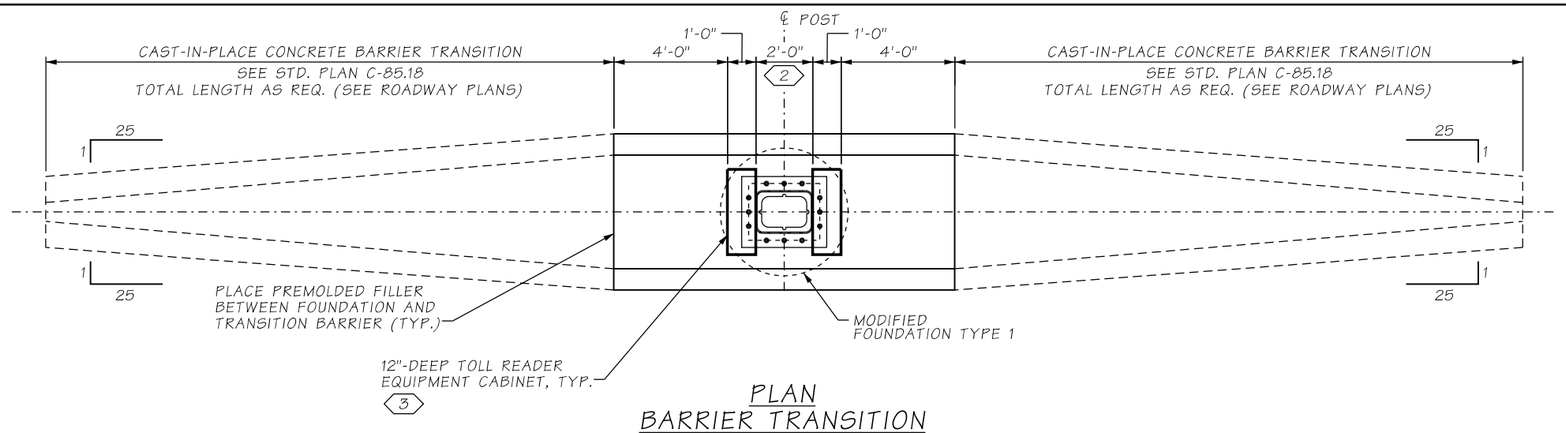
Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS

MONOTUBE SIGN STRUCTURES
TRAFFIC BARRIER SHAPE CAP TYPE A

PLAN REF. NO. SSD-A13

SHEET ____ OF ____ SHEETS



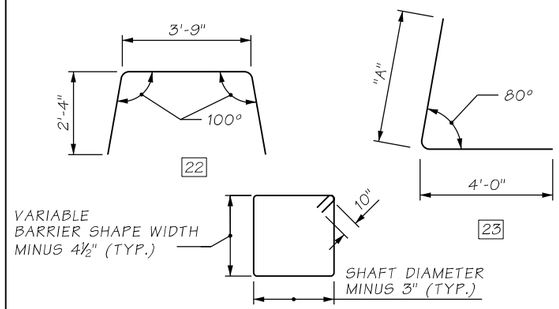
PLAN
BARRIER TRANSITION

ANCHOR RODS NOT SHOWN.

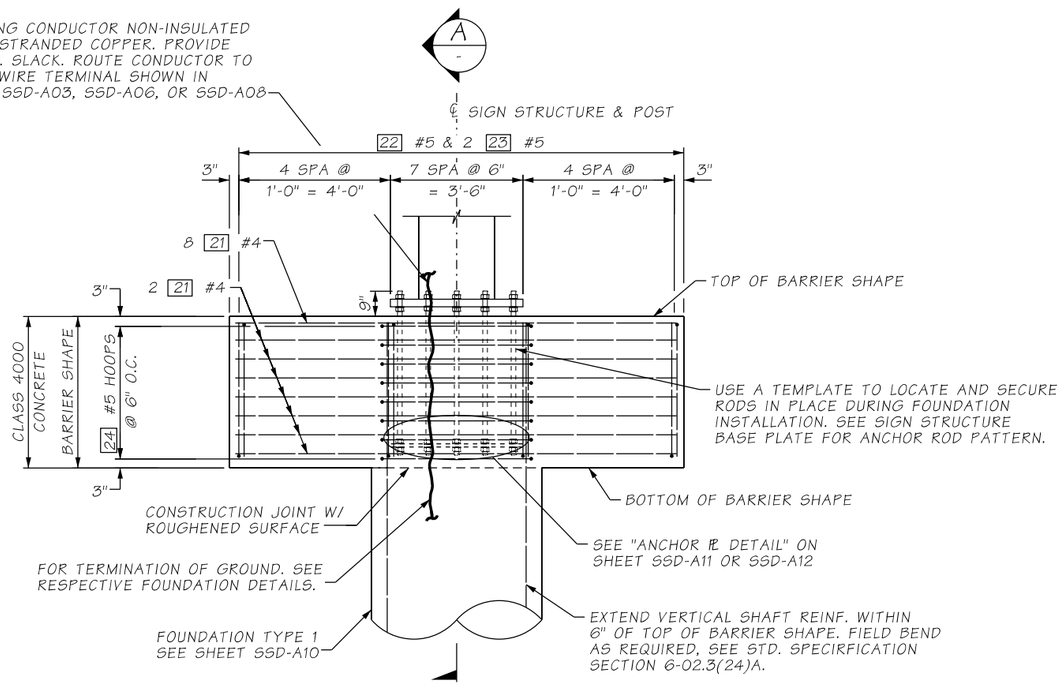
BENDING DIAGRAM

MARK	LOCATION	SIZE	NO. REQ'D	LENGTH	
21	BARRIER SHAPE HORIZONTAL	4	20	11'-9"	STR.
22	BARRIER SHAPE VERTICAL	5	14	7'-8"	
23	BARRIER SHAPE VERTICAL	5	"A"	"A"	
24	BARRIER SHAPE HOOP	5	"A"	"A"	

NOTE: CONCRETE COVER SHALL BE 1½" UNLESS SHOWN OTHERWISE.
"A" ~ DETERMINE FROM PLANS

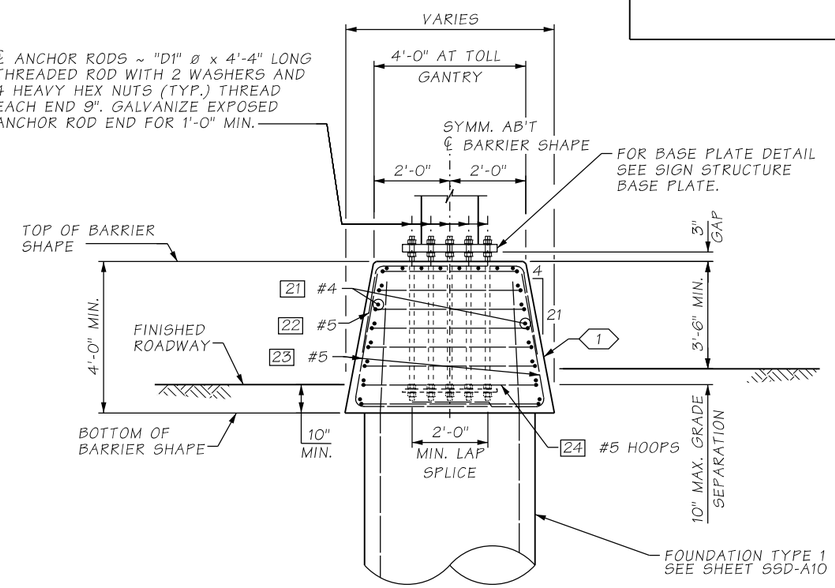


GROUNDING CONDUCTOR NON-INSULATED #4 AWG STRANDED COPPER. PROVIDE 3'-0" MIN. SLACK. ROUTE CONDUCTOR TO GROUND WIRE TERMINAL SHOWN IN DETAIL 1 SSD-A03, SSD-A06, OR SSD-A08



ELEVATION

℄ ANCHOR RODS ~ "D1" ø x 4'-4" LONG THREADED ROD WITH 2 WASHERS AND 4 HEAVY HEX NUTS (TYP.) THREAD EACH END 9". GALVANIZE EXPOSED ANCHOR ROD END FOR 1'-0" MIN.



SECTION A

NOTES:

1. ALTERNATIVE BARRIER FACE DESIGN IS TO BE USED ONLY WHEN OUTSIDE BARRIER FACE IS VISIBLE TO THE PUBLIC SEE DETAIL ON SHEET SSD-A16.
2. UNLESS NOTED OTHERWISE ON PLANS.
3. SINGLE 12"-DEEP TOLL READER EQUIPMENT CABINET AT SOME LOCATIONS. SEE ST SERIES PLANS.

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A14.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:02:07 AM	DESCRIPTION	DATE	NO					

SR FILE NO. SHEET

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE
E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE
E.O.R. 2 STAMP BOX

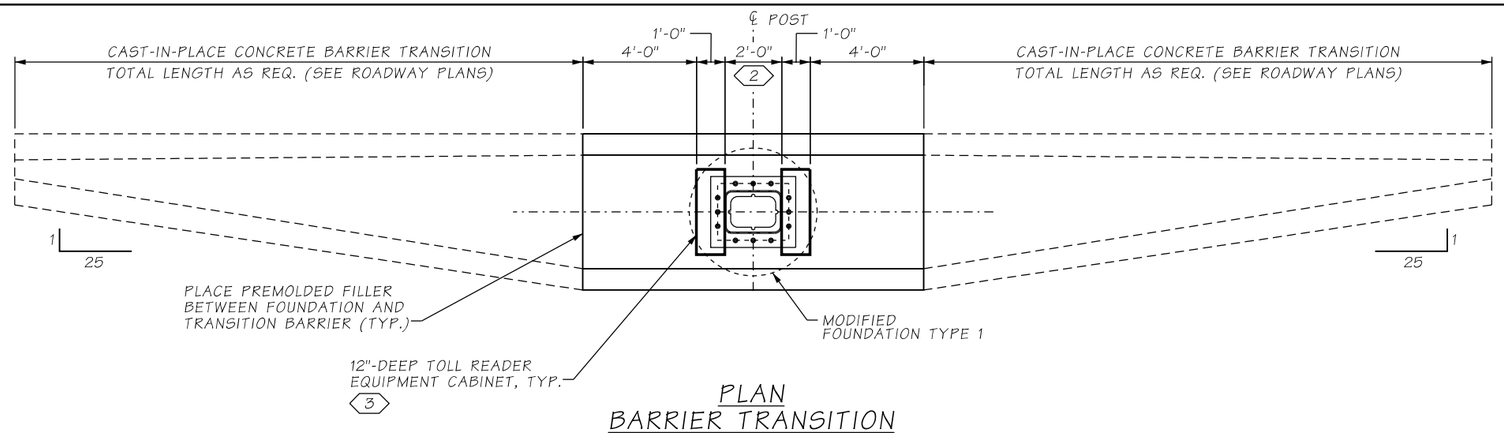
Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS

MONOTUBE SIGN STRUCTURES
TRAFFIC BARRIER SHAPE CAP TYPE B

PLAN REF. NO. SSD-A14

SHEET OF SHEETS



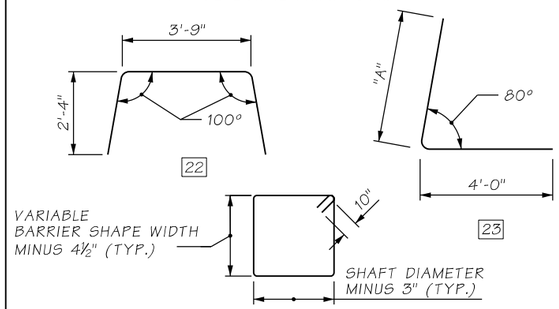
PLAN
BARRIER TRANSITION

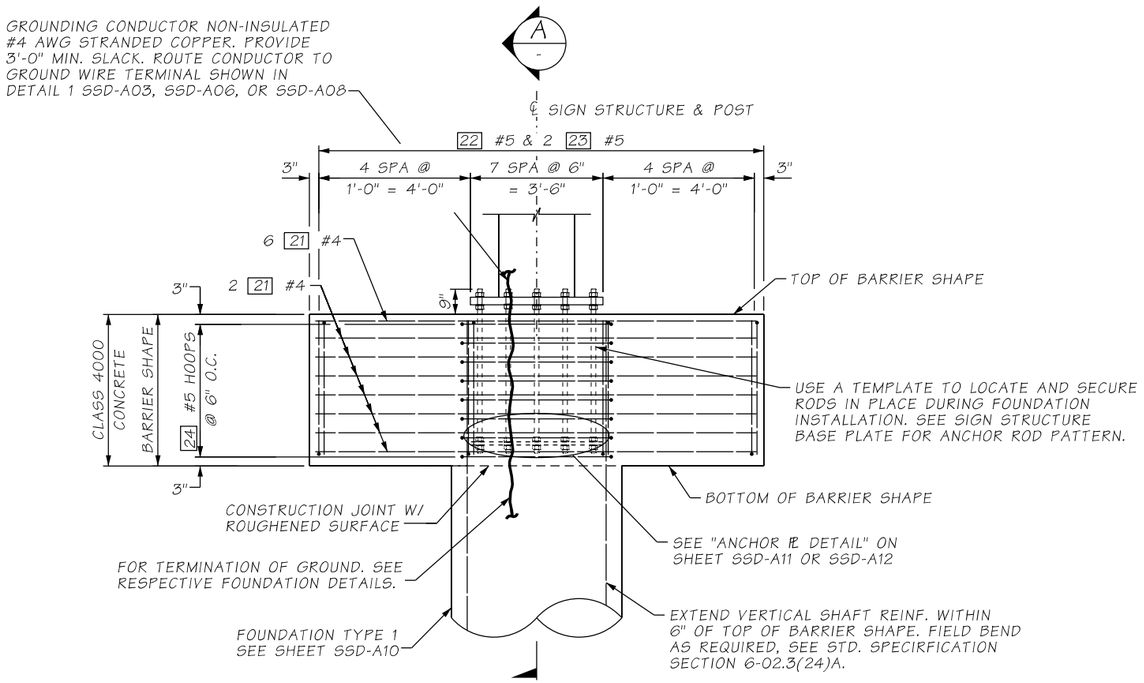
ANCHOR RODS NOT SHOWN.

BENDING DIAGRAM

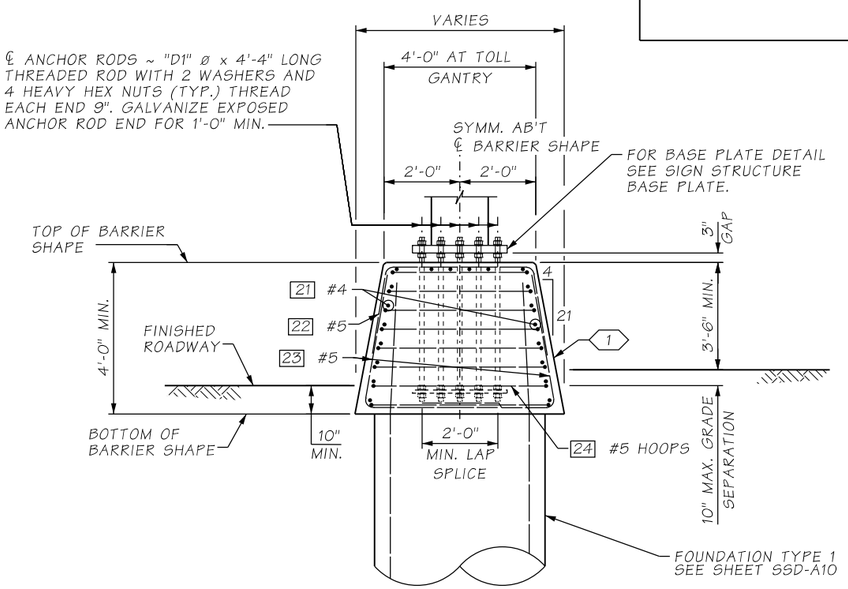
MARK	LOCATION	SIZE	NO. REQ'D	LENGTH	
21	BARRIER SHAPE HORIZONTAL	4	20	11'-9"	STR.
22	BARRIER SHAPE VERTICAL	5	14	7'-8"	
23	BARRIER SHAPE VERTICAL	5	"A"	"A"	
24	BARRIER SHAPE HOOP	5	"A"	"A"	

NOTE: CONCRETE COVER SHALL BE 1½" UNLESS SHOWN OTHERWISE.
"A" ~ DETERMINE FROM PLANS





ELEVATION



SECTION A

NOTES:

1. ALTERNATIVE BARRIER FACE DESIGN IS TO BE USED ONLY WHEN OUTSIDE BARRIER FACE IS VISIBLE TO THE PUBLIC SEE DETAIL ON SHEET SSD-A16.
2. UNLESS NOTED OTHERWISE ON PLANS.
3. SINGLE 12"-DEEP TOLL READER EQUIPMENT CABINET AT SOME LOCATIONS. SEE ST SERIES PLANS.

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:08:54 AM	DESCRIPTION	DATE	NO					

SR ____ FILE NO. ____ SHEET ____

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

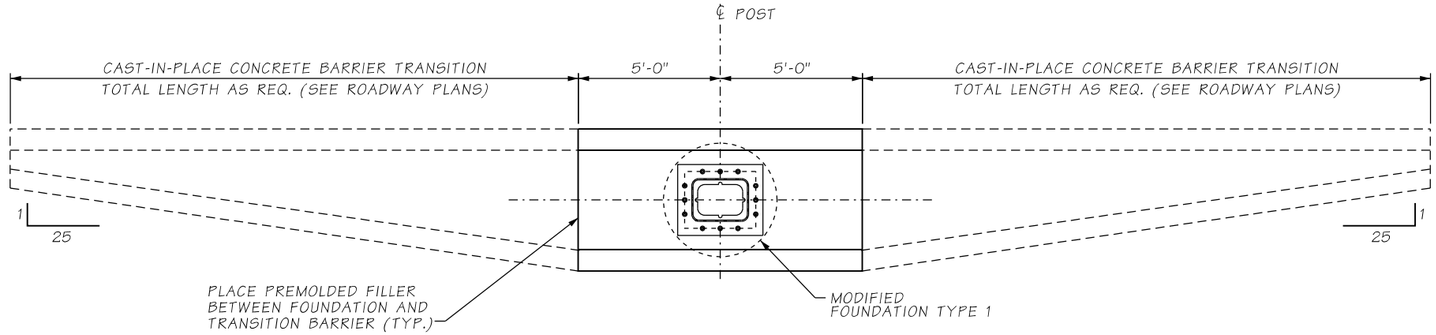
Washington State Department of Transportation
FLATIRON LANE
wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT
SIGN STRUCTURE DETAILS

MONOTUBE SIGN STRUCTURES
TRAFFIC BARRIER SHAPE CAP TYPE C

PLAN REF. NO. SSD-A15

SHEET OF SHEETS



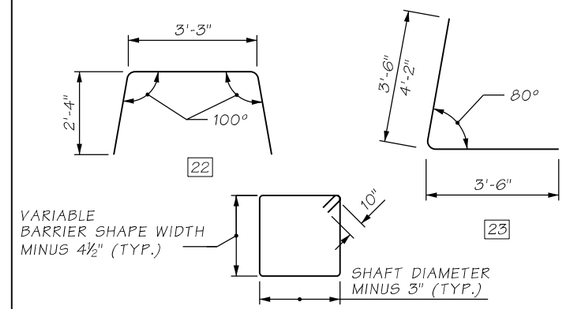
PLAN
BARRIER TRANSITION

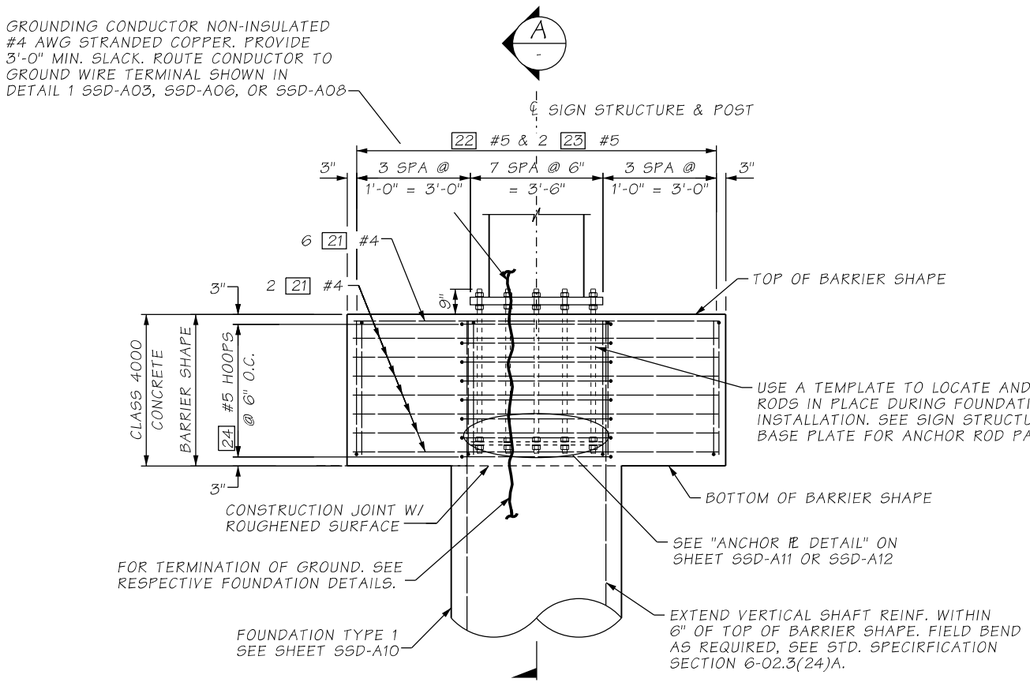
ANCHOR RODS NOT SHOWN.

BENDING DIAGRAM

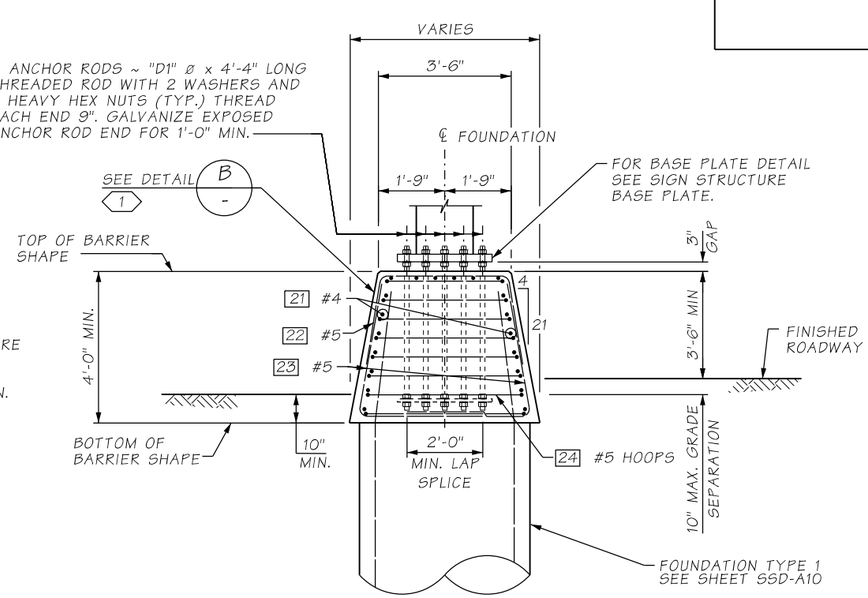
MARK	LOCATION	SIZE	NO. REQ'D	LENGTH	
21	BARRIER SHAPE HORIZONTAL	4	20	9'-9"	STR.
22	BARRIER SHAPE VERTICAL	5	14	7'-8"	
23	BARRIER SHAPE VERTICAL	5	28	6'-4"	
24	BARRIER SHAPE HOOP	5	"A"	"A"	

NOTE: CONCRETE COVER SHALL BE 1½" UNLESS SHOWN OTHERWISE.
"A" ~ DETERMINE FROM PLANS

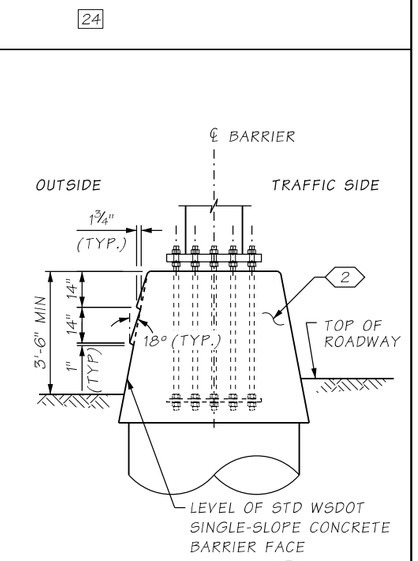




ELEVATION



SECTION A



DETAIL B
ALTERNATIVE FLARED FACE

NOTES:

1. ALTERNATIVE BARRIER FACE DESIGN IS TO BE USED ONLY WHEN OUTSIDE BARRIER FACE IS VISIBLE TO THE PUBLIC SEE DETAIL ON SHEET SSD-A16.
2. REINFORCING NOT SHOWN FOR CLARITY.

SR ____ SHEET ____ FILE NO. ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/6/2021								
Time:	11:48:20 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

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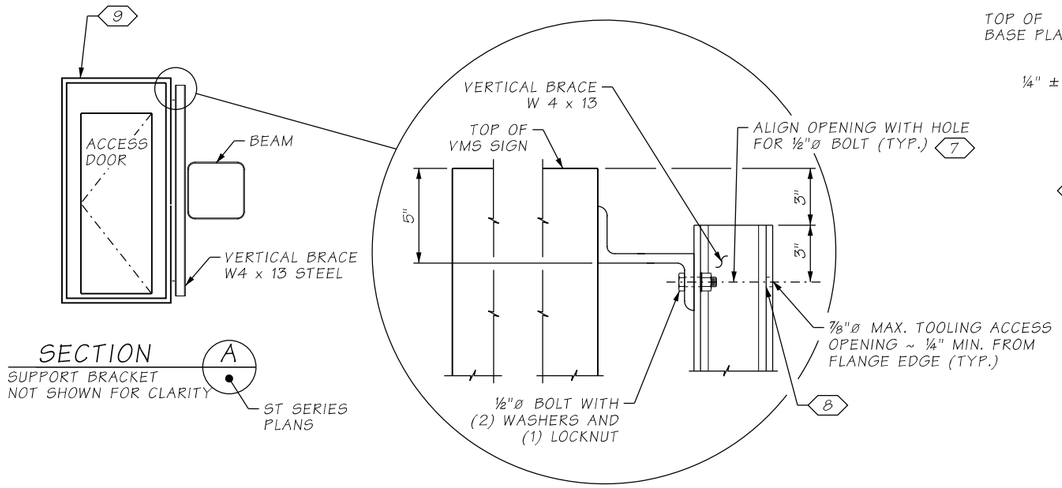
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

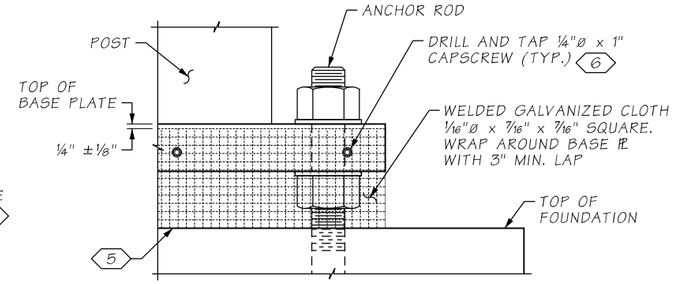
SIGN STRUCTURE DETAILS

MONOTUBE SIGN STRUCTURES
TRAFFIC BARRIER SHAPE CAP TYPE D

PLAN REF. NO. **SSD-A16**

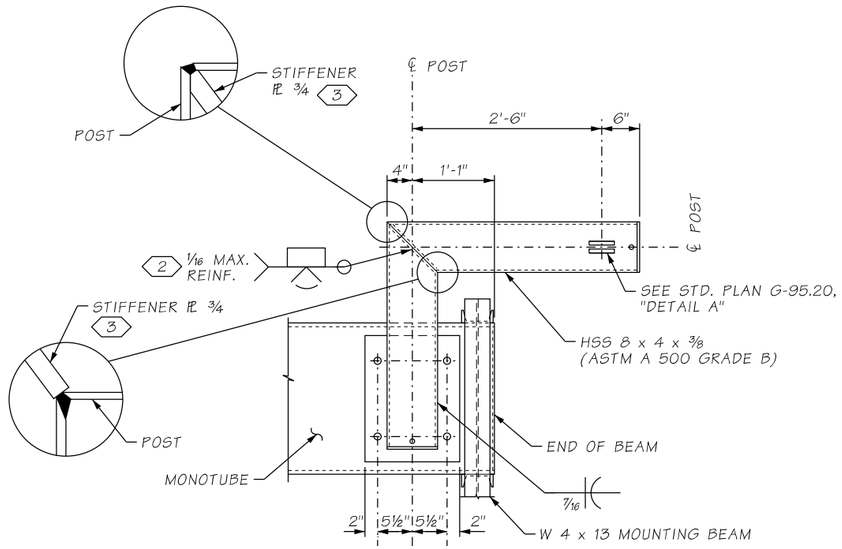
SHEET ____ OF ____ SHEETS





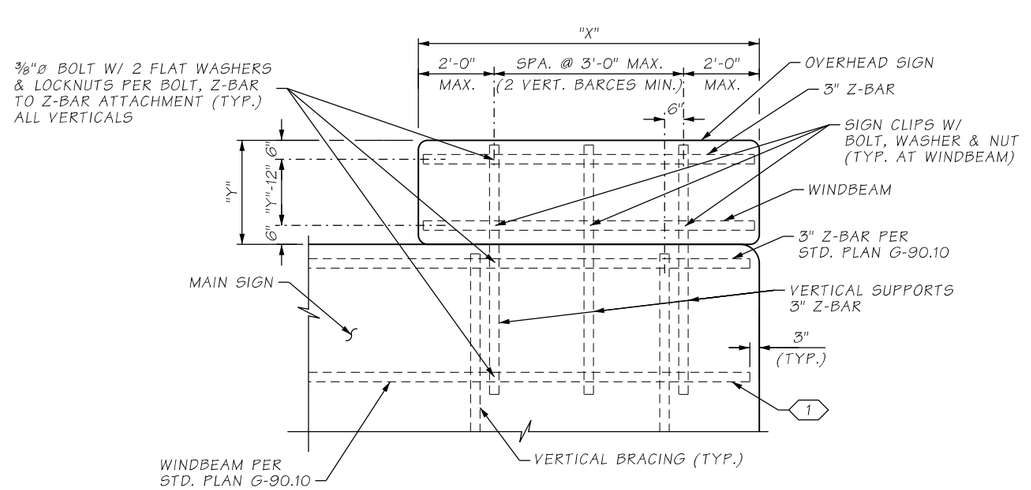
SCREEN DETAIL

PLACE SCREEN AS INDICATED



MODIFIED FALL RESTRAINT BRACKET DETAIL

SEE "FALL RESTRAINT BRACKET INSTALLATION ON EXISTING MONOTUBE SIGN BRIDGE" SHEET 2 OF 3 FOR PLATE & BOLTING INFORMATION.



OVERHEAD SIGN PANEL ATTACHMENT DETAIL

LOOKING AT FRONT FACE OF SIGN.

GENERAL NOTES:

1. FOR VERTICAL BRACING DETAILS OF MAIN SIGN SEE STD. PLAN G-90.10.
2. FOR DETAILS AND MATERIAL SPECIFICATIONS NOT SHOWN, SEE STD. PLANS G-24.60 AND G-90.10.

NOTES:

1. FOR OVERHEAD SIGN PANEL ATTACHMENT, WINDBEAM MAY BE REPLACED WITH A 3" Z-BAR OR PLACE AN ADDITIONAL 3" Z-BAR DIRECTLY BELOW WINDBEAM LOCATION.
2. MT & VT @ ROOT PASS 100% & @ COVER PASS 100%.
3. DRILL 1⅛"ø HOLE IN CENTER OF STIFFENER.
4. NOT USED.
5. BOTTOM OF SCREEN TO BE IN FULL CONTACT WITH TOP OF FOUNDATION. MAY OVERSIZE HEIGHT AND TRIM BOTTOM OF SCREEN TO FIT TOP OF FOUNDATION AS NEEDED TO BE IN FULL CONTACT.
6. ASTM F-593 W/ STAINLESS STEEL WASHER. SPACED AT 9" CNTRS. (LIBERALLY COAT THREADS WITH ANTI-SEIZE COMPOUND, TYP.)
7. TOOLING ACCESS OPENING & HOLE FOR ½"ø BOLT MAY BE FIELD DRILLED.
8. FILL OPENING WITH FULLY TORQUED ASTM A325 BOLT IN ACCORDANCE WITH STD. SPEC. 6-02.3(17)K AND 6-03.3(33) (TYP.)
9. ATTACH EACH VMS SUPPORT BRACKET TO EACH VERTICAL BRACE W4 x 13 STEEL WITH AT LEAST TWO ½"ø BOLTS PER SUPPORT BRACKET. ALL BOLTS SHALL BE ASTM A193 CLASS 2, GRADE B8 OR APPROVED EQUAL.

SR ____ FILE NO. ____ SHEET ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:18:46 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

FINAL DESIGN NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

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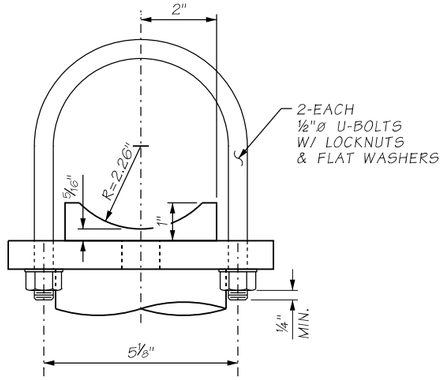
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

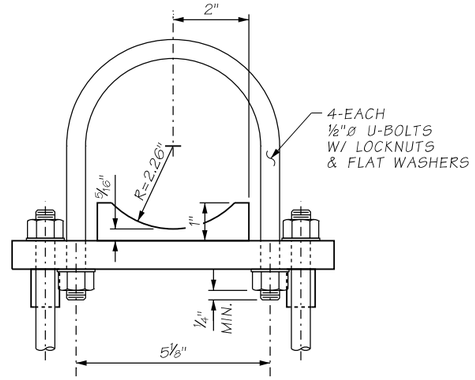
SIGN STRUCTURE DETAILS

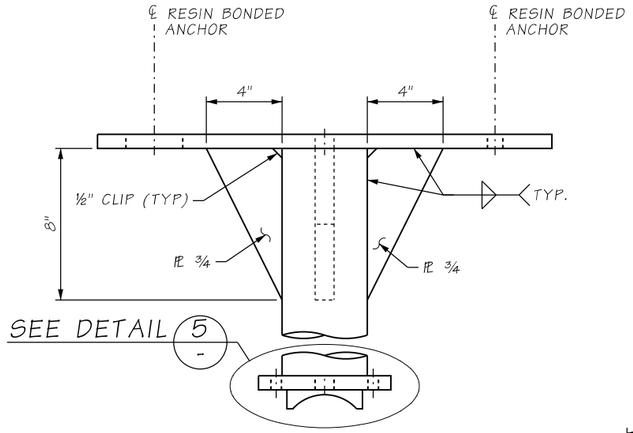
MONOTUBE SIGN STRUCTURES COMMON DETAILS

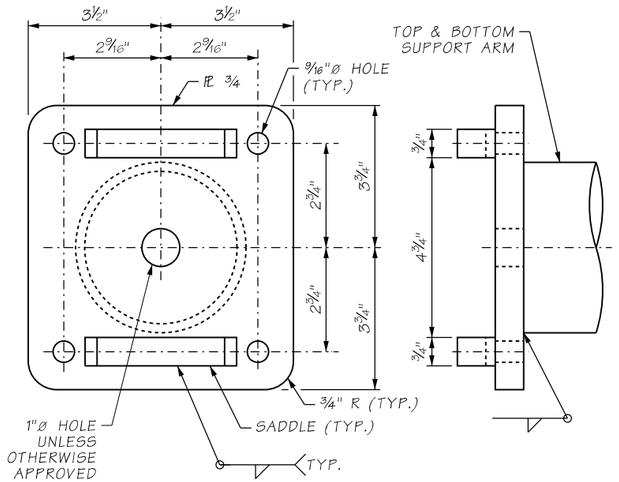
PLAN REF. NO. SSD-A17

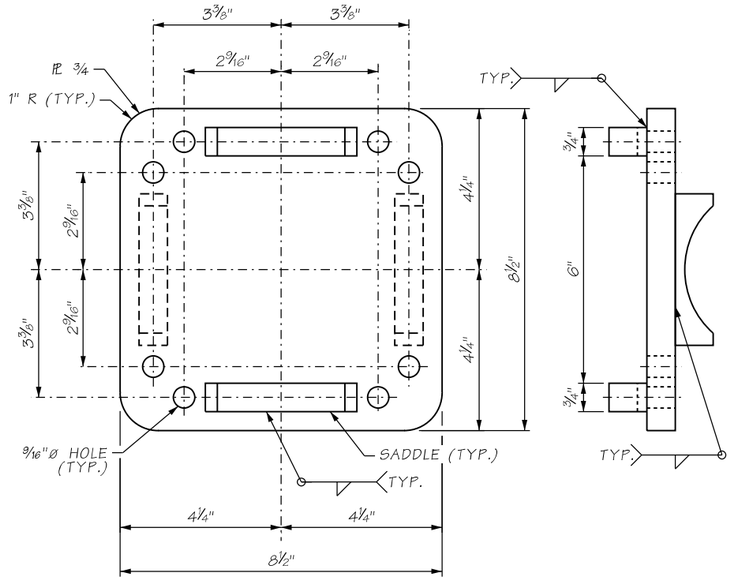
SHEET ____ OF ____ SHEETS

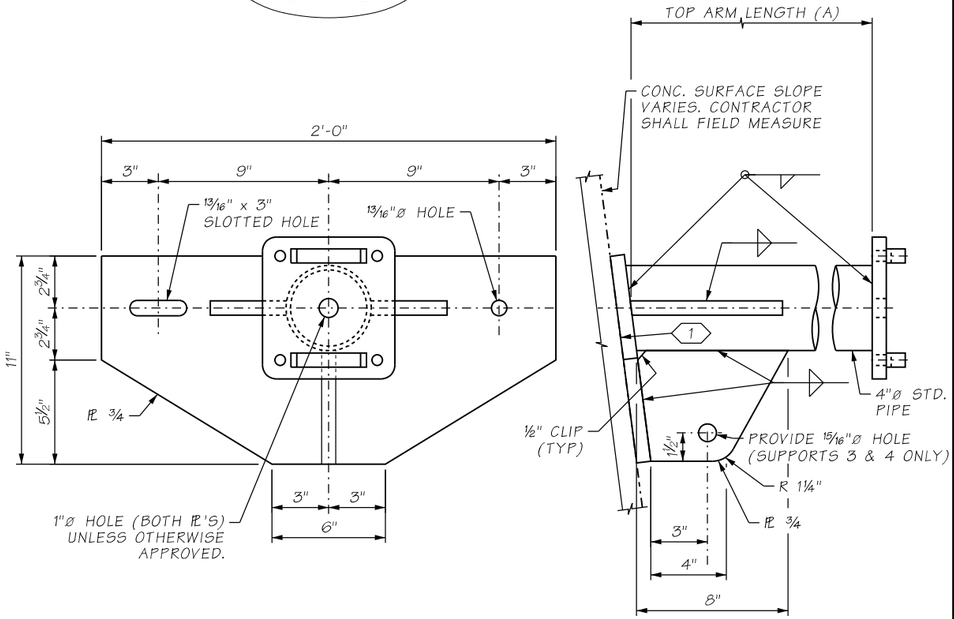












DETAIL 5 — ST SERIES PLANS & SSD-A18

DETAIL 6 — ST SERIES PLANS

DETAIL 1 — ST SERIES PLANS

SR ____ FILE NO. ____ SHEET ____

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Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:21:24 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

DATE

E.O.R. 1 STAMP BOX

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE

E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

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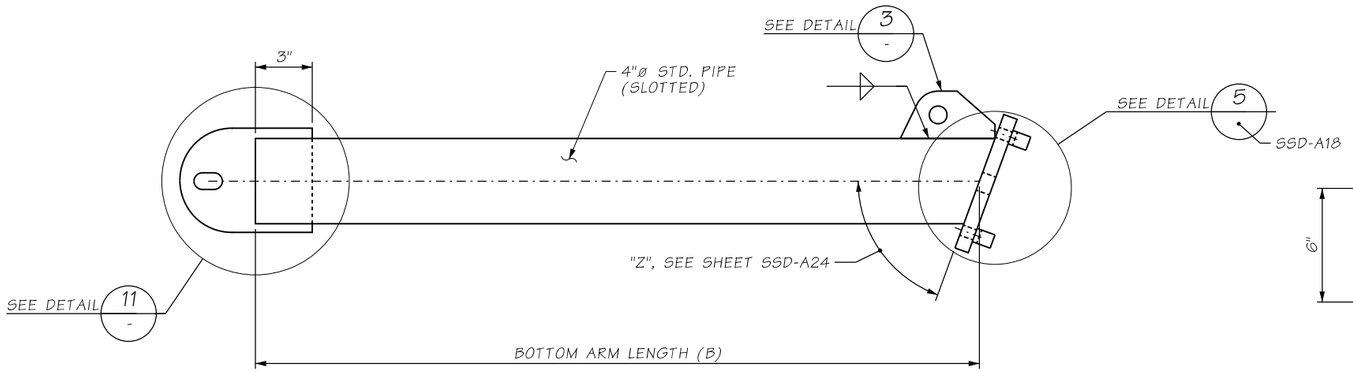
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

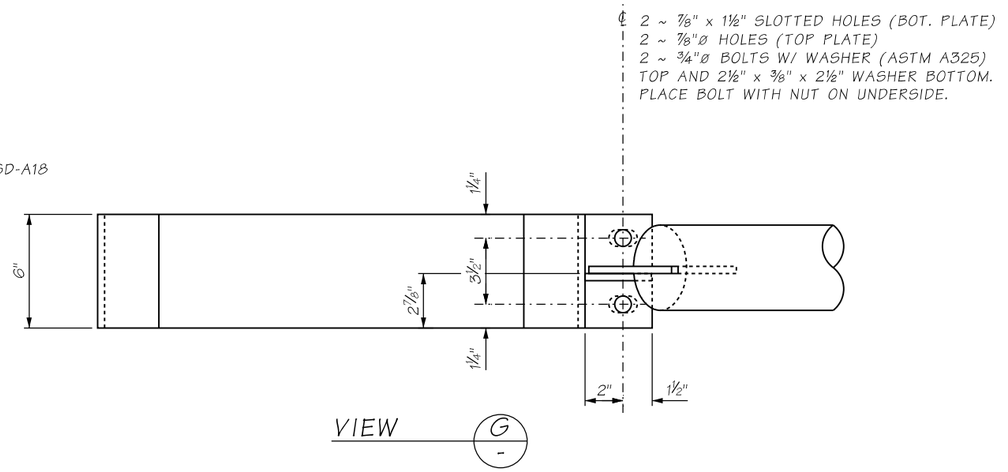
BRIDGE MOUNTED SIGN BRACKET DETAILS 1 OF 6

PLAN REF. NO. SSD-A18

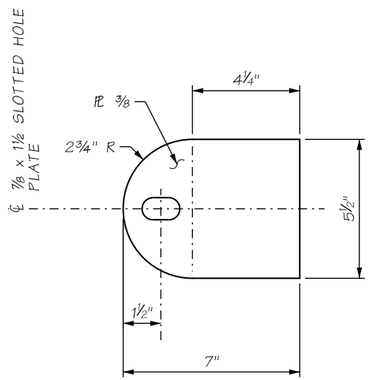
SHEET OF SHEETS



DETAIL 2 — ST SERIES PLANS



VIEW G -



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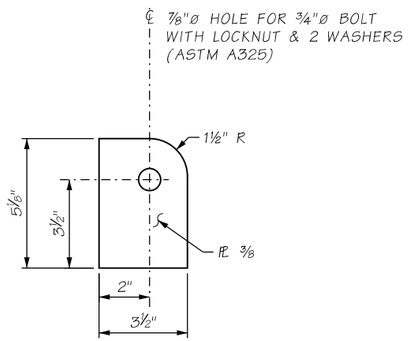

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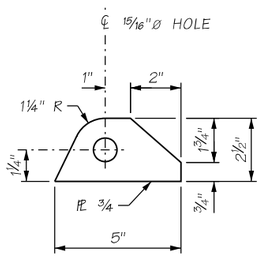

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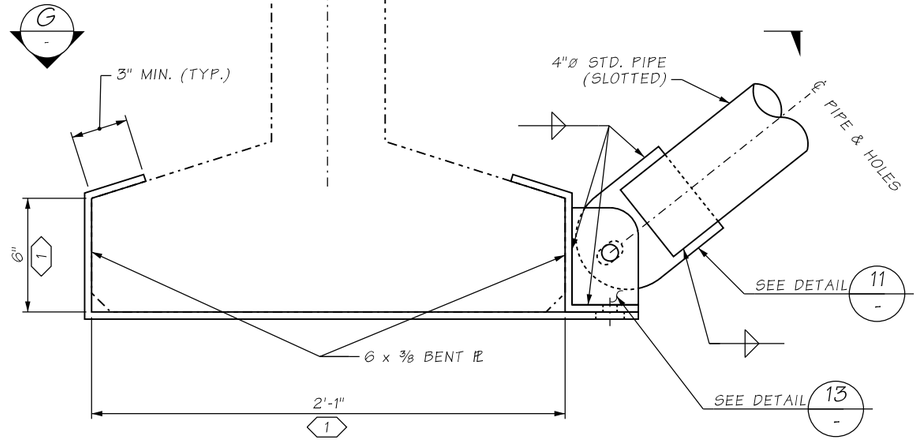

DETAIL 7 — ST SERIES PLANS

NOTES:

1. CONTRACTOR TO FIELD VERIFY.

SR ____ SHEET ____ FILE NO. ____

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:24:25 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURIVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

DATE — E.O.R. 2 STAMP BOX

Washington State Department of Transportation

FLATIRON LANE

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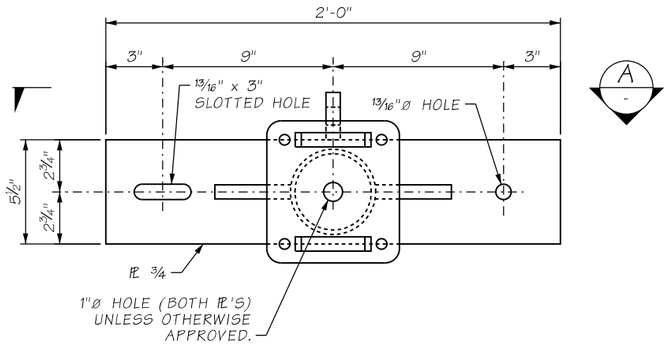
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

BRIDGE MOUNTED SIGN BRACKET
DETAILS 2 OF 6

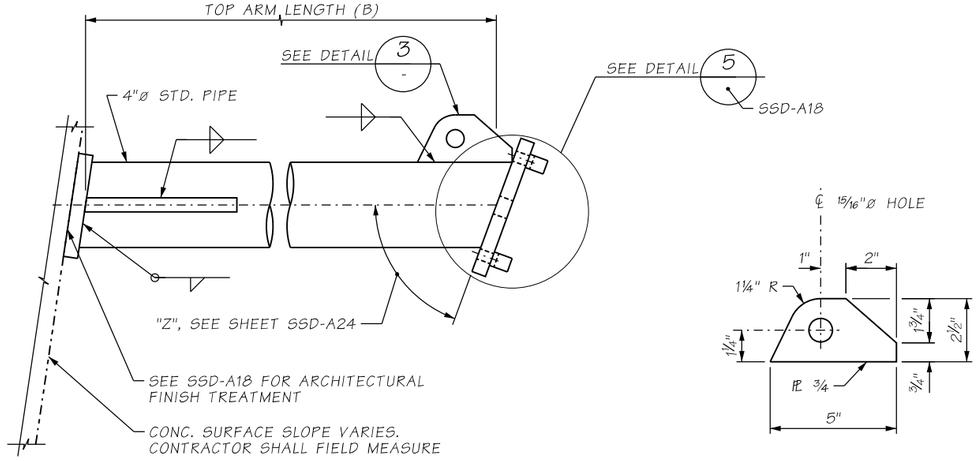
PLAN REF. NO. SSD-A19

SHEET OF SHEETS



DETAIL 2

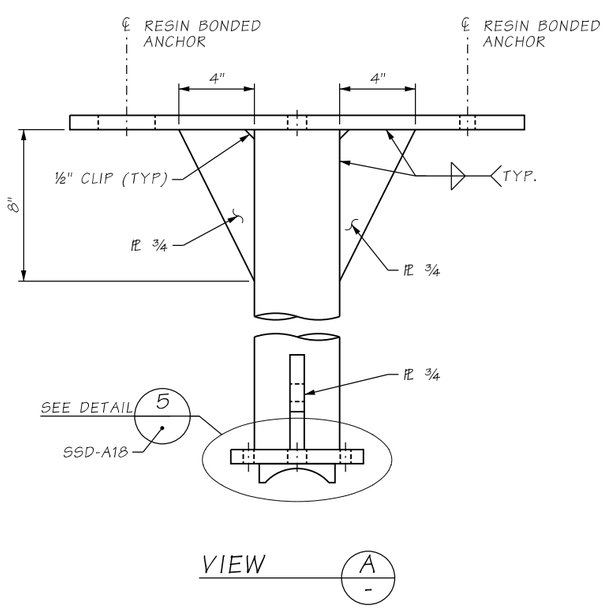
ST SERIES PLANS



DETAIL 7

ST SERIES PLANS

DETAIL 3 -



VIEW A -

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Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:27:36 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27410 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

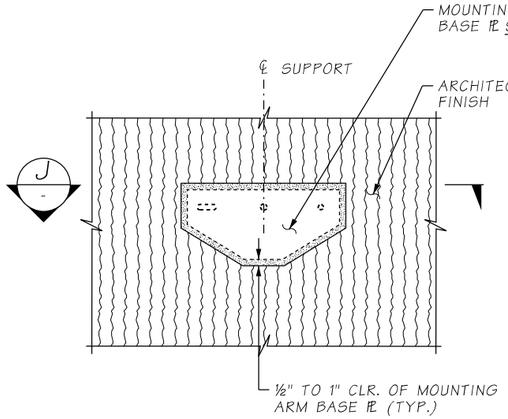
SIGN STRUCTURE DETAILS

BRIDGE MOUNTED SIGN BRACKET DETAILS 3 OF 6

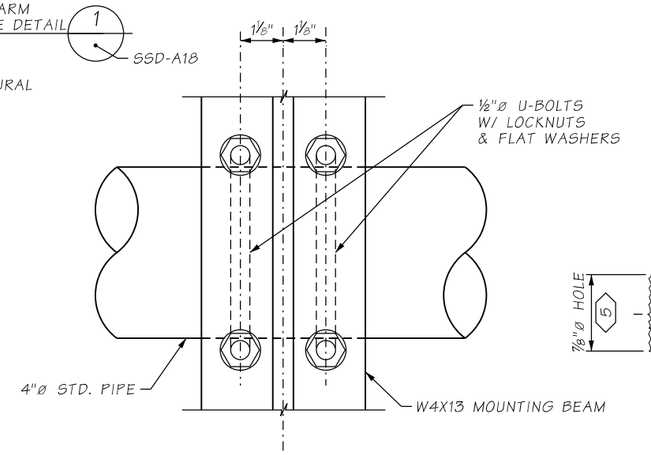
PLAN REF. NO. SSD-A20

SHEET OF SHEETS

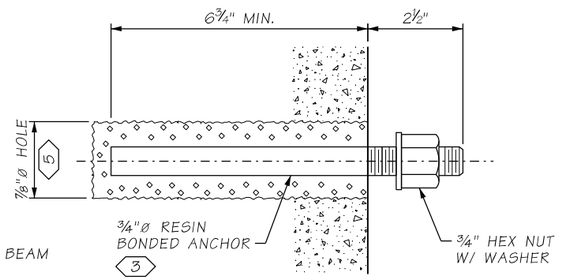
SR ____ FILE NO. ____ SHEET ____



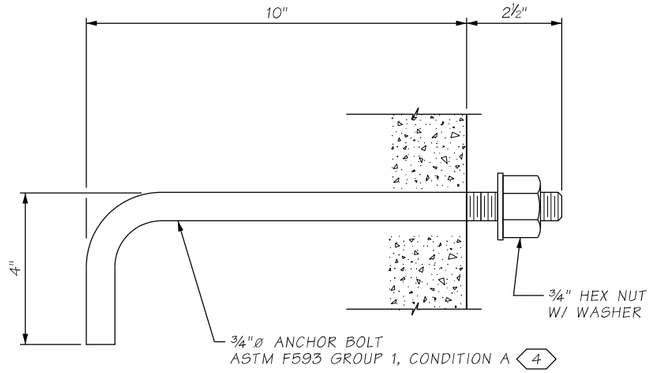
ARCHITECTURAL FINISH TREATMENT



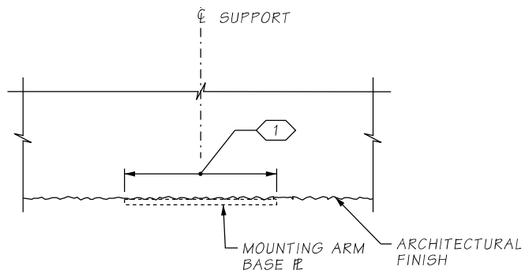
W4X13 CONNECTION DETAIL



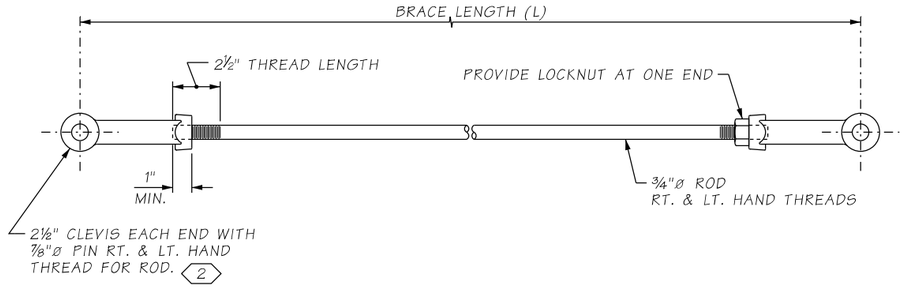
RESIN BONDED ANCHOR DETAIL



ALTERNATE ANCHOR DETAIL



SECTION J -



DETAIL 4

ST SERIES PLANS

NOTES:

1. APPLY NO-SHRINK GROUT TYPE 2 (WSDOT STANDARD SPECIFICATION 9-20.3(2)) TO SURFACE FOR UNIFORM BEARING.
2. ANVIL INTERNATIONAL FIG. 299, B LINE FIG. B3201, BERGEN-POWER FIG. 276, PIPELINE TECHNOLOGY & PRODUCTS FIG. 95, OR APPROVED EQUAL.
3. INSTALL RESIN BONDED ANCHOR NORMAL TO CONCRETE SURFACE.
4. INSTALL ANCHOR NORMAL TO CONCRETE SURFACE. FOR NEW CONSTRUCTION ONLY.
5. RESIN BONDED ANCHORS SHALL BE PER WSDOT GSP 6-02.2.OPT1.GR6 AND INSTALLED PER ACCORDANCE WITH THE RESIN MANUFACTURER'S RECOMMENDATIONS.

SR ___ FILE NO. ___ SHEET ___

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A23.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/30/2021								
Time:	11:33:28 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

BRIDGE MOUNTED SIGN BRACKET DETAILS 6 OF 6

PLAN REF. NO. SSD-A23

SHEET ___ OF SHEETS

SEGMENTS	SIGN BRACKET NO.	Z° (SEE DETAIL 2, PLAN REF. NO. SSD-013) (CONTRACTOR TO VERIFY)					
		BOTTOM ARM (B)					
		SUPPORT #1	SUPPORT #2	SUPPORT #3	SUPPORT #4	SUPPORT #5	SUPPORT #6
1A	04-01A/04-01B	79.6°	79.6°	79.6°	79.7°	N/A	N/A
1A	08-03	74.5°	76.9°	78.7°	80.0°	N/A	N/A
1A	08-04	59.4°	61.7°	63.6°	65.4°	N/A	N/A
1A	14-07A/14-07B	116.9°	116.8°	116.6°	116.4°	N/A	N/A
1A	14-08	90.0°	90.0°	90.0°	90.0°	N/A	N/A
1A	14-12	125.3°	116.7°	112.1°	N/A	N/A	N/A
1A	20-18	42.5°	43.7°	N/A	N/A	N/A	N/A
2C	48-7A/48-7B	73.2°	75.6°	77.4°	78.8°	N/A	N/A
2C	48-8	55.9°	60.1°	63.4°	66.1°	N/A	N/A
2C	49-10	54.7°	63.7°	69.3°	72.9°	N/A	N/A
2C	49-11	62.9°	71.7°	76.3°	79.0°	N/A	N/A
2C	50-01A, 50-01B, & 50-01C	82.7°	82.9°	83.1°	83.1°	83.2°	83.2°
2C	50-02	82.5°	85.1°	86.4°	87.1°	N/A	N/A
1A	56-2	55.8°	57.0°	N/A	N/A	N/A	N/A
1A	56-3	55.8°	57.7°	N/A	N/A	N/A	N/A
1A	56-5	45.2°	46.5°	N/A	N/A	N/A	N/A
1B	TRS 60-2	73.3°	76.0°	77.9°	79.3°	N/A	N/A
1B	TRS 60-3	73.7°	76.2°	78.1°	79.5°	N/A	N/A
1B	60-5	90.0°	90.0°	N/A	N/A	N/A	N/A

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A24.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	11/30/2021				CONTRACT NO. C9242				
Time:	11:35:41 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE — wood. — exeltech

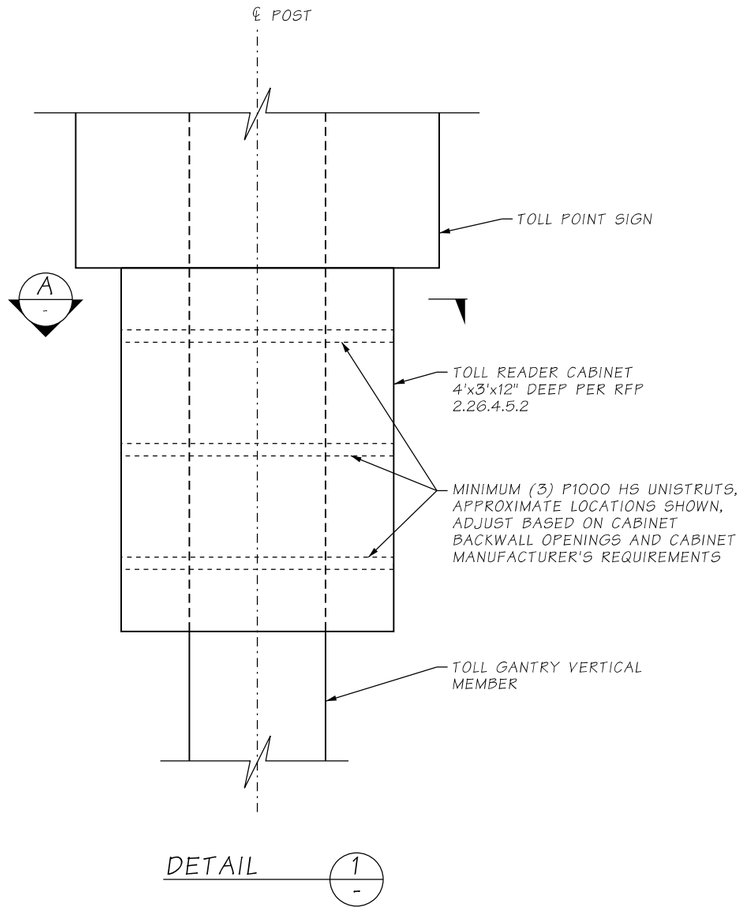
I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

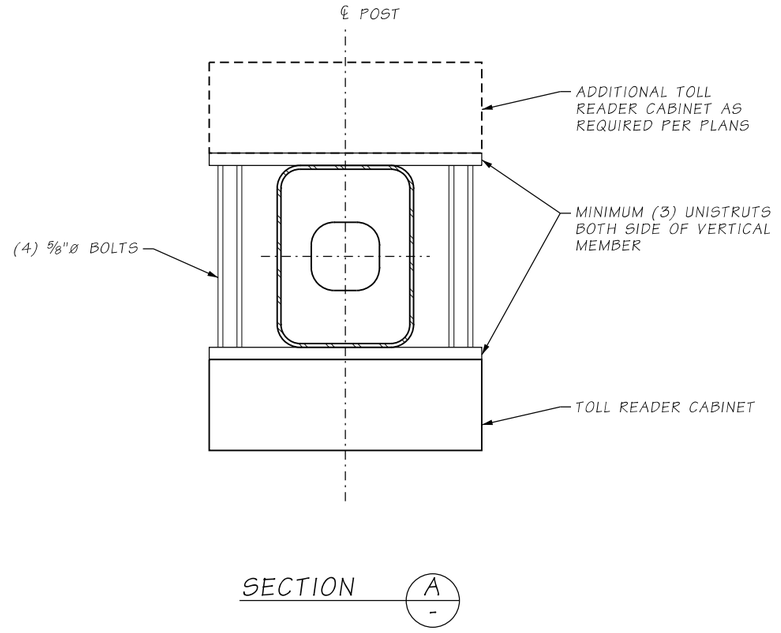
BRIDGE MOUNTED SIGN BRACKET ANGLE SCHEDULE

PLAN REF. NO. SSD-A24

SHEET ____ OF ____ SHEETS



DETAIL 1 -



SECTION A -

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_SSD_A25.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG								
Detailed By:	M. TUMANOV				JOB NUMBER XL5467				
Current Revision By:									
Date:	11/30/2021				CONTRACT NO. C9242				
Time:	11:38:55 AM	DESCRIPTION	DATE	NO					

SAMTOSH J KURUVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

TOLL READER CABINET MOUNTING DETAIL

PLAN REF. NO. SSD-A25

SHEET ____ OF SHEETS

SIGN STRUCTURE ST-013							
		SHEAR			MOMENT		
LOAD COMBINATION	JOINT LABEL	X (kip)	Y (kip)	Z (kip)	Mx (k-ft)	My (k-ft)	Mz (k-ft)
DEAD LOAD	N1	14.37	19.58	0.00	0.00	0.00	-102.30
HORIZONTAL WIND LOAD	N1	0.00	0.00	26.83	603.73	-246.73	0.00
ICE LOAD	N1	1.51	2.14	0.00	0.00	0.00	-10.74
NORMAL WIND LOAD	N1	0.00	0.00	2.52	28.35	0.00	0.00
TRANSVERSE WIND LOAD	N1	-3.60	-0.17	0.00	0.00	0.00	31.20

SIGN STRUCTURE ST-016A							
	REACTION						
LOAD COMBINATION	X (kip)	Y (kip)	Z (kip)	Mx (k-ft)	My (k-ft)	Mz (k-ft)	LABEL
DEAD LOAD	0.08	0.05	0.01	0.00	0.02	0.00	A
DEAD LOAD	0.11	0.06	0.02	0.00	0.01	0.00	B
DEAD LOAD	0.18	0.08	0.04	0.00	-0.01	0.00	C
DEAD LOAD	0.30	0.11	0.06	0.00	-0.01	0.00	D
DEAD LOAD	-0.08	0.70	-0.02	-0.08	0.00	0.44	E
DEAD LOAD	-0.11	0.51	-0.02	-0.05	0.00	0.26	F
DEAD LOAD	-0.18	0.54	-0.03	-0.03	-0.01	0.19	G
DEAD LOAD	-0.30	0.64	-0.05	-0.03	-0.01	0.16	H
WIND LOAD (-)	1.38	0.54	0.09	0.00	0.79	0.00	A
WIND LOAD (-)	0.98	0.31	0.06	0.00	0.67	0.00	B
WIND LOAD (-)	1.01	0.28	0.10	0.00	0.59	0.00	C
WIND LOAD (-)	1.27	0.31	0.17	0.00	0.53	0.00	D
WIND LOAD (-)	2.49	-0.29	-0.73	0.04	1.19	-0.29	E
WIND LOAD (-)	1.93	-0.41	-0.17	0.29	0.97	-0.70	F
WIND LOAD (-)	1.94	-0.37	0.14	0.38	0.62	-0.93	G
WIND LOAD (-)	2.43	-0.38	0.35	0.40	0.41	-1.25	H
ICE LOAD	0.05	0.03	0.01	0.00	0.01	0.00	A
ICE LOAD	0.06	0.03	0.01	0.00	0.01	0.00	B
ICE LOAD	0.10	0.04	0.02	0.00	-0.01	0.00	C
ICE LOAD	0.16	0.05	0.03	0.00	-0.01	0.00	D
ICE LOAD	-0.05	0.38	-0.01	-0.05	0.00	0.24	E
ICE LOAD	-0.06	0.25	-0.01	-0.02	0.00	0.13	F
ICE LOAD	-0.10	0.27	-0.02	-0.02	-0.01	0.09	G
ICE LOAD	-0.16	0.34	-0.03	-0.01	-0.01	0.08	H
WIND LOAD (+)	-1.36	-0.53	-0.12	0.00	-0.65	0.00	A
WIND LOAD (+)	-0.93	-0.30	-0.08	0.00	-0.52	0.00	B
WIND LOAD (+)	-0.97	-0.27	-0.11	0.00	-0.43	0.00	C
WIND LOAD (+)	-1.03	-0.25	-0.14	0.00	-0.39	0.00	D
WIND LOAD (+)	-2.50	0.32	0.81	0.11	-1.27	0.19	E
WIND LOAD (+)	-1.98	0.30	0.19	-0.10	-1.02	0.12	F
WIND LOAD (+)	-1.99	0.15	-0.16	-0.14	-0.59	0.01	G
WIND LOAD (+)	-2.66	0.58	-0.40	-0.13	-0.39	0.10	H

*A TO D ARE THE BOTTOM SUPPORTS MOVING SOUTH TO NORTH. E TO H ARE THE TOP SUPPORTS MOVING SOUTH TO NORTH.

*PLANE OF SIGN IS IN THE Z-DIRECTION. +Y IS UPWARD AND -Y IS DOWNWARD. WIND IS IN THE ±X DIRECTION.

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_STT_005.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	M. BUDSBERG				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	12/7/2021								
Time:	9:31:43 AM	DESCRIPTION	DATE	NO					

SANTOSH J KURUVILLA — STATE OF WASHINGTON — 27410 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

LOAD REACTION SCHEDULE

PLAN REF. NO. STT-005

SHEET ____ OF ____ SHEETS

SIGN STRUCTURE ST-016B							
	REACTION						
LOAD COMBINATION	X (kip)	Y (kip)	Z (kip)	Mx (k-ft)	My (k-ft)	Mz (k-ft)	LABEL
DEAD LOAD	0.08	0.05	0.01	0.00	0.02	0.00	A
DEAD LOAD	0.11	0.06	0.02	0.00	0.01	0.00	B
DEAD LOAD	0.18	0.08	0.04	0.00	-0.01	0.00	C
DEAD LOAD	0.30	0.11	0.06	0.00	-0.01	0.00	D
DEAD LOAD	-0.08	0.70	-0.02	-0.08	0.00	0.44	E
DEAD LOAD	-0.11	0.51	-0.02	-0.05	0.00	0.26	F
DEAD LOAD	-0.18	0.54	-0.03	-0.03	-0.01	0.19	G
DEAD LOAD	-0.30	0.64	-0.05	-0.03	-0.01	0.16	H
WIND LOAD (-)	1.38	0.54	0.09	0.00	0.79	0.00	A
WIND LOAD (-)	0.98	0.31	0.06	0.00	0.67	0.00	B
WIND LOAD (-)	1.01	0.28	0.10	0.00	0.59	0.00	C
WIND LOAD (-)	1.27	0.31	0.17	0.00	0.53	0.00	D
WIND LOAD (-)	2.49	-0.29	-0.73	0.04	1.19	-0.29	E
WIND LOAD (-)	1.93	-0.41	-0.17	0.29	0.97	-0.70	F
WIND LOAD (-)	1.94	-0.37	0.14	0.38	0.62	-0.93	G
WIND LOAD (-)	2.43	-0.38	0.35	0.40	0.41	-1.25	H
ICE LOAD	0.05	0.03	0.01	0.00	0.01	0.00	A
ICE LOAD	0.06	0.03	0.01	0.00	0.01	0.00	B
ICE LOAD	0.10	0.04	0.02	0.00	-0.01	0.00	C
ICE LOAD	0.16	0.05	0.03	0.00	-0.01	0.00	D
ICE LOAD	-0.05	0.38	-0.01	-0.05	0.00	0.24	E
ICE LOAD	-0.06	0.25	-0.01	-0.02	0.00	0.13	F
ICE LOAD	-0.10	0.27	-0.02	-0.02	-0.01	0.09	G
ICE LOAD	-0.16	0.34	-0.03	-0.01	-0.01	0.08	H
WIND LOAD (+)	-1.36	-0.53	-0.12	0.00	-0.65	0.00	A
WIND LOAD (+)	-0.93	-0.30	-0.08	0.00	-0.52	0.00	B
WIND LOAD (+)	-0.97	-0.27	-0.11	0.00	-0.43	0.00	C
WIND LOAD (+)	-1.03	-0.25	-0.14	0.00	-0.39	0.00	D
WIND LOAD (+)	-2.50	0.32	0.81	0.11	-1.27	0.19	E
WIND LOAD (+)	-1.98	0.30	0.19	-0.10	-1.02	0.12	F
WIND LOAD (+)	-1.99	0.15	-0.16	-0.14	-0.59	0.01	G
WIND LOAD (+)	-2.66	0.58	-0.40	-0.13	-0.39	0.10	H

*A TO D ARE THE BOTTOM SUPPORTS MOVING SOUTH TO NORTH. E TO H ARE THE TOP SUPPORTS MOVING SOUTH TO NORTH.

*PLANE OF SIGN IS IN THE Z-DIRECTION. +Y IS UPWARD AND -Y IS DOWNWARD. WIND IS IN THE ±X DIRECTION.

SIGN STRUCTURE ST-016C							
	REACTION						
LOAD COMBINATION	X (kip)	Y (kip)	Z (kip)	Mx (k-ft)	My (k-ft)	Mz (k-ft)	LABEL
DEAD LOAD	0.09	0.13	0.04	-0.04	-0.03	0.12	A
DEAD LOAD	0.07	0.11	0.02	-0.05	-0.01	0.18	B
DEAD LOAD	-0.09	0.13	-0.04	-0.03	0.02	0.12	C
DEAD LOAD	-0.07	0.11	-0.02	-0.04	0.01	0.18	D
WIND LOAD (-VE)	0.65	0.00	-0.04	0.01	0.16	0.01	A
WIND LOAD (-VE)	0.64	-0.01	0.11	0.01	0.03	-0.01	B
WIND LOAD (-VE)	0.09	0.01	-0.08	0.02	0.10	0.01	C
WIND LOAD (-VE)	0.10	-0.01	0.01	0.01	0.02	-0.01	D
ICE LOAD	0.04	0.06	0.02	-0.02	-0.01	0.05	A
ICE LOAD	0.03	0.05	0.01	-0.02	0.00	0.08	B
ICE LOAD	-0.04	0.05	-0.02	-0.01	0.01	0.05	C
ICE LOAD	-0.03	0.05	-0.01	-0.02	0.01	0.08	D
WIND LOAD (+VE)	-0.80	-0.01	0.10	-0.02	-0.25	-0.01	A
WIND LOAD (+VE)	-1.28	0.01	-0.22	-0.01	-0.06	0.02	B
WIND LOAD (+VE)	-0.11	-0.01	0.14	-0.03	-0.16	-0.02	C
WIND LOAD (+VE)	-0.20	0.01	-0.02	-0.01	-0.04	0.02	D

*A & B ARE THE BOTTOM SUPPORTS MOVING SOUTH TO NORTH. C & D ARE THE TOP SUPPORTS MOVING SOUTH TO NORTH.

*PLANE OF SIGN IS IN THE Z-DIRECTION. +Y IS UPWARD AND -Y IS DOWNWARD. WIND IS IN THE ±X DIRECTION.

SR ____ FILE NO. ____ SHEET ____

C:\pwworking\wsdot\dms16392\XL5467_DE_STT_006.dgn

Design Mgr:	BRIAN BELL	RELEASE FOR CONSTRUCTION RECORD			REGION NO.	STATE	FED. AID. PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By:	O. SACHIN				10	WASH.			
Checked By:	H. CLAYVILLE				JOB NUMBER XL5467				
Detailed By:	M. TUMANOV								
Current Revision By:					CONTRACT NO. C9242				
Date:	11/12/2021								
Time:	5:53:19 PM	DESCRIPTION	DATE	NO					

SANTOSH J KURAVILLA — STATE OF WASHINGTON — 27430 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

E.O.R. 1 STAMP BOX — DATE

FINAL DESIGN
NOT FOR CONSTRUCTION

E.O.R. 2 STAMP BOX — DATE

Washington State Department of Transportation

FLATIRON LANE

wood. exeltech

I-405; RENTON TO BELLEVUE WIDENING AND EXPRESS TOLL LANES PROJECT

SIGN STRUCTURE DETAILS

LOAD REACTION SCHEDULE

PLAN REF. NO. STT-006

SHEET OF SHEETS